DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1923, No. 42

ANALYTIC SURVEY OF STATE COURSES OF STUDY FOR RURAL ELEMENTARY SCHOOLS

By

CHARLES M. REINOEHL

PROFESSOR OF SCHOOL ADMINISTRATION, UNIVERSITY OF ARKANSAS, FAYETTEVILLE

WASHINGTON
GOVERNMENT PRINTING OFFICE
1923

ADDITIONAL COPIES

OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
20 CENTS PER COPY

CONTENTS.

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D.C., February 17, 1923.

SIR: There is an increasing tendency in recent years among public officials responsible for preparing State courses of study to consider in their preparation the organization and special needs of small rural schools, particularly those of the one- and two-teacher variety. Courses prepared in conformity with the eight-grade organization, with a teacher for each grade, based on the experiences and needs of city children and on the expectation of a nine or nine and a half month school term, are obviously of little value to the inexperienced and immature teachers who abound in the open-country schools, in which one teacher has charge of eight grades, and the term is often six months or less in length. The growing realization of the fact that these different school conditions require different content of the course of study and different teaching practice has led to a widespread interest in the preparation of a new curriculum which will be based primarily on the needs of rural children and the organization of rural schools. The State is the logical authority from which to expect guidance in this direction.

Mr. Reinohl, formerly rural supervisor of schools for the State of Montana, has made a careful analysis of the different State courses of study and has included in his report much information which will, in my opinion, be of value in the preparation of State and other courses of study for use in rural schools. I, therefore, recommend the accompanying manuscript for publication as a bulletin of the Bureau of Education.

Respectfully submitted.

JNO. J. TIGERT,
Commissioner.

The SECRETARY OF THE INTERIOR.

ANALYTIC SURVEY OF STATE COURSES OF STUDY FOR RURAL ELEMENTARY SCHOOLS.

Chapter I.

INTRODUCTORY CURRICULA STUDIES.

STATEMENT OF PROBLEMS.

This investigation undertakes to analyze and interpret the character and content of State courses of study for rural elementary schools. It presents in tabular form the aims, subject matter, and materials most frequently recommended in these courses. It seeks to point out the great need for wisely selected materials of instruction and for changes in the preparation of new courses justified by social progress.

Just as reform in any line may be said to proceed from what is to what ought to be, so courses that are rebuilt must be based upon existing courses and must be changed to meet the needs of this "new day." This rebuilding requires (1) detailed information of courses of study in use, about which little has been known, and (2) definite information regarding the facts which country folks ought to know to live successful, happy, and remunerative lives. It is the purpose of this survey to give full information regarding the content of State courses and to interpret the findings in the light of progressive opinion as set forth in recent pedagogical literature bearing on rural education.

Specifically the major problems covered by this survey are:

1. What is the character and content of State courses of study for rural elementary schools?

2. What do these courses have to offer regarding the most effective organization of one-teacher schools?

3. What is the relative importance of elementary school subjects as revealed by their prominence in State courses?

4. To what extent do aims and content materials in State courses, as determined by their frequency of appearance in the outlines, meet present needs of rural elementary education?

5. What contributions have the most widely recommended supplementary books and materials to offer for the improvement of rural courses of study?

SOURCES OF MATERIALS.

The survey is based upon the State courses of study for use in rural elementary schools. They were available from all but four States—California, Florida, Arkansas, and Rhode Island.

Although such terms as teacher's manual, handbook, monograph, or syllabi are used in certain States, the most common term and the term used in this survey is "State courses of study."

All but 8 of the 44 courses used were issued since 1914. Thirty-five appeared within the years 1915 and 1917. By January 1, 1920, twenty-one had been revised or reprinted. Of these, only 40 per cent show marked revisions as to point of view, content, organization, or adaptation to rural schools. The 44 courses surveyed may, therefore, be said to represent, to a very large extent, the courses still in use in rural schools.

With few exceptions the outlines in all subjects for any one State are bound in one volume. In a few States the outlines for various subjects are bound separately. Separate binding tends to allow for fuller treatment, while it has little effect on the relative number of pages given to each subject.

The publications are remarkably uniform in size of print and of page. There are only slight variations from a 6-by-9-inch page. The large body of the material in State courses is usually printed in 11-point type. Variations from this size of type are no greater for the outlines of one subject than for those of another. These facts made it possible to compare the length of outlines by the number of pages given to each subject and to each grade.

The body of the material used would make a volume of nearly 10,000 (9,431) pages, one-tenth of which is given to materials aside from the outlines of the subjects themselves, such as daily programs, plan of the course, and libraries (see Ch. II).

PREPARATION OF COURSES.

There are variations in the methods used in preparing State courses. The number of writers varies all the way from 50 contributors in Arizona to State department members in most States. Some courses, like the one in Illinois, have gone through a series of revisions; others are made without any reference to revisions. Specialists have contributed largely to some courses, but it frequently happens that courses so prepared are not properly coordinated and correlated by an editor or editing committee. College and normal-school professors and city superintendents have frequently helped to write courses; county superintendents and grade teachers, occasionally; successful

rural teachers, seldom, if ever. The practical wisdom of live rural teachers standing next to the children and everyday life of the people is seldom sought. Here is a fruitful source of valuable information in curriculum building that has not been utilized.

The courses which the writer considers best adapted to rural schools have been prepared under the direction of a selected few in supervisory positions and with the cooperative assistance of selected teachers. The Minnesota, Wisconsin, New Jersey, Iowa, and Montana courses are among those so prepared. In their preparation the cooperation of selected county superintendents, rural leaders, and successful teachers was sought in contributing suggestions as to the materials to include or to omit. Timely and current materials in our present social and national life have in consequence been included, while much traditional and less valuable material has been eliminated. In these courses, too, the influence of studies on elimination made by the Iowa[1] and the Minnesota[2] committees, and by Wilson,[3] by Jessup,[4] and by others are seen in the eliminations recommended and in the choice of materials. The Montana course, in arithmetic, for example, contains, with some modifications, a list of eliminations suggested by these investigations. This work of preparing courses adapted to the needs of rural schools has scarcely begun. In all probability this work can best be done by members of State departments or supervisors, who seek the cooperation of all those live rural teachers and those supervisory and administrative workers in the States most competent to contribute suggestions, and who utilize all useful information from scientific investigations and professional books and periodicals.

FUNCTIONAL VALUE OF COURSES IN USE.

The Louisiana, Kansas, and Montana courses were prepared for use in rural schools exclusively. The Arizona course was planned to meet the needs of graded and city schools only, but it is also used by rural teachers. The Illinois, Iowa, Missouri, and Oklahoma courses were prepared primarily to meet the needs of rural schools. All other State courses included in this survey were prepared for use in all public elementary schools without regard to their location.

Letters were written to each State department of public instruction making inquiry as to the extent of distribution and use of the

[1] Second Report of the Committee on Elimination of Subject Matter. 1916. Iowa State Teachers' Association.

[2] Elimination in Elementary Course of Study, 1914. Minnesota Educational Association.

[3] Wilson, H. B., and Wilson, G. M. Motivation of School Work, p. 180.

[4] Jessup, "Economy of Time in Arithmetic," in Elementary School Teacher, vol. 14, p. 461 (June, 1914).

course of study. Replies to these letters may be summarized as follows:

	States.
Distribution of State courses of study:	
Each teacher has a copy	15
Quite generally found among teachers	21
Indefinite replies	8
Use made of State courses of study:	
Extensive—strict adherence to the course of study	16
Moderate—followed quite generally	19
Slight—little attention given to it	4
Indefinite replies	5

These reports seem to indicate that, in most States, courses of study are found generally in the hands of all rural teachers, and that the provisions in such courses are adhered to closely. But this conclusion, drawn from official statements, does not agree with reports contained in State and county educational surveys, from which the following quotations are taken:

Only 3 per cent of the teachers attending institutes in 1913 were using the manual issued by the State department, and 18.2 per cent had no course of study to use in teaching.[5]

The textbook was far more frequently followed than the course of study. When the course of study was followed, it was usually found to be in upper rather than in lower grades. This was undoubtedly due to proximity to the State eighth-grade examination.[6]

Practically all the teachers visited nominally use the State course of study, but in reality they follow quite literally the arrangement of topics set forth in the particular text rather than the course of study. At least 90 per cent of the teachers showed a blind following of the textbook.[7]

Relatively few teachers were found who were following the course of study.[8]

After reading the type of classroom instruction, one realizes the complete failure teachers make in following courses of study; even textbooks are followed in a sleepy disinterested way.[9]

The complete State course of study is effective in very few rural or semirural schools.[10]

There was little evidence in 78 schools visited that teachers were working the State course of study very hard, although the teachers confessed they were following it in part at least.[11]

The children were rigorously held to their texts; no use is made of the experiences gained at home, on the farm, or in the environment.[12]

The writer's experience in Montana and other States is in line with these survey reports. In asking teachers where their children are in the outlines of the course of study, it has been found not infrequently

[5] Ohio State School Survey. Report of the State School Survey Commission, 1914. p. 122.
[6] U. S. Bu. of Educ., Bul. No. 31, 1918. The Educational System of South Dakota. p. 123.
[7] U. S. Bu. of Educ., Bul. No. 29, 1916. Educational Survey of Wyoming. pp. 55–57.
[8] U. S. Bu. of Educ., Bul. No. 44, 1917. Educational Conditions in Arizona. p. 138.
[9] U. S. Bu. of Educ., Bul. No. 41, 1919. An Educational Study of Alabama. p. 114.
[10] Public Schools Survey and Report, 1919. p. 99. Virginia Educational Commission.
[11] Illinois School Survey, 1917. p. 313. Illinois State Teachers' Association.
[12] Public Education in Delaware, 1919. p. 59. General Education Board.

that children are not in the course of study but in the textbook. Older pupils have shown many times that they have taken every lesson in their readers, geographies, hygiene books, and other texts, when the course of study advises taking up content in an order different from that of the textbooks. In all probability courses are not followed as closely as State superintendents have reported, and following courses intelligently is doubtless still much less common.

REASONS FOR NONINTELLIGENT USE OF COURSES OF STUDY.

Survey reports point to the conclusion that there is greater uniformity in following textbooks slavishly than in following courses of study intelligently. In too many schools textbooks are the course of study. Many courses are still too much limited to textbook material. There are even courses which contain little more than "page limits" in prescribed textbooks, and there are many teachers who follow such courses by making page assignments. With what justice can the practice therefore be condemned? Even stronger teachers are often judged by ground covered rather than efficiency in child development. Courses that contain only the rawest materials entail upon teachers impossible work before the materials are presentable to children. If courses of study are to be truly helpful to teachers in making their work more efficient, courses must be provided which contain something more than mere page assignments or the rawest materials of instruction.

The nonintelligent use of a course of study is also due in part to teachers' lack of familiarity with its provisions. That teachers do not know the course of study is a criticism frequently made. The writer has found teachers showing honest surprise when valuable features in the course of study were pointed out to them, and even when such features were very clearly stated. To find a course lost among the books of a school library or hidden away in remote corners of a teacher's desk is a fair indication that the course is not used by the teacher, certainly not in an intelligent way.

A common criticism made by professional writers and survey directors is that courses are not adapted for use by the type of teachers usually found in rural schools. Yet these teachers are in charge of 60 per cent of the nation's children. A majority of the courses under survey constitute but "an outline of the mental march pupils are ordered to make." It is only occasionally that one in a supervisory position finds a courageous leader, like the Brown Mouse, who breaks traditional lines and "works out from life to everything in the course of study." It is the typical rural teacher who should be kept clearly in mind by those who would prepare courses which such teachers can use intelligently and effectively.

Laws are frequently inadequate to secure proper enforcement of course-of-study provisions. Only the mechanical provisions of courses are likely to be followed by many teachers as long as a sufficient corps of visiting supervisors is not secured. Attempts at supervision through enriched courses fail with weak and inexperienced rural teachers without the personal guidance of a helpful leader. Even the better courses outlined by problems or topics become excuses for wasteful haste on the part of poor teachers.

Better courses with which teachers are familiar and more direct supervision will doubtless produce better results in teaching, but the intelligent use of courses can not be fully realized without better prepared teachers.

IMPROVING THE COURSE OF STUDY.

In considering the improvements needed in State publications under survey it is well at the outset to raise the question, What constitutes a *good* course of study? There is need for standards which may serve as useful guides in evaluating the materials of instruction contained in State courses and presented in later chapters of this survey.

Dr. Frank McMurry has defined a good course of study in any branch of knowledge as "the sum of (live) problems along one great line of interest, organized in good sequence, and containing data enough to furnish satisfactory answers to the problems."[13]

Dr. C. H. Judd describes the school curriculum in the following terms:

> A curriculum of the school is a living thing. It is constantly undergoing readjustments. Its content is drawn from the social life to which it introduces pupils, and its arrangement depends on the ability of pupils of different ages and different capabilities to grasp this constantly readjusted content.[14]

These statements indicate that a good course of study contains materials of instruction that are well selected and well organized. To be well selected, the materials must have present-day significance, they must be socially valuable, and they must be useful to the learner. To be well organized, whether in topic or in problem form, the materials must be graded in difficulty to advance learners by easy steps. To make certain that printed materials have large functional value for children, teachers need to constantly readjust the materials for adaptation to the particular needs of a group of children or of individual pupils.

This survey undertakes to show that the best courses of study contain:

---

[13] McMurry, F. Uniform Curriculum and Examinations. N. E. A. Jour. of Proc., 1913, p. 136.
[14] Judd, C. H. Introduction to the Scientific Study of Education, p. 197.

(*a*) Clear, helpful discussion of topics of a general nature, such as daily programs and libraries. (These topics are listed in the next chapter.)

(*b*) Specific statements containing the teaching or learning aims in each subject outlined in the course of study. Stated aims for each grade, in the case of graded outlines for a subject, are also important aids.

(*c*) The fundamental principals of method clearly stated and fully illustrated with model lessons for rural teachers.

(*d*) A content that is sharply defined, that is definite to the extent of its educational usefulness, and that is enriched by a redistribution of emphasis. This requires the elimination of material little used by society, such as cube root, diagraming, details of many battles in war, much of mere location in geography, and names of all bones of the body. It requires, further, that the material in the courses not culled out be given the "country twist" with proper motives for work. Finally, there should be included in the courses (1) the vitalized materials needed for a successful life in an agricultural community, including topics bearing upon the economic and social phases of farm life, and (2) the major post-war problems coming before our democratic society, such as appear in current events, papers, and periodicals.

A NATIONALIZED CURRICULUM.

This investigating seeks to justify within certain limitations the nationalization of courses of study. There is doubtless an irreducible minimum for all normal children in various years of work the country over. The writer believes that a uniform minimum curriculum is a useful conception.

This view is supported by several State courses and various educational writings, from which the following quotations are typical:

The need for some plan for the promotion of desirable uniformity is very apparent.—*Pennsylvania State Course of Study, 1914, p. 3.*

A uniform system of school work is the aim of this course.—*Missouri Course of Study, 1919, p. 3.*

The State course of study seeks to unify the school work of the State in presenting a definite plan and a definite outline of work for the common schools.—*Illinois State Course of Study, 1912, p. 7.*

It is time to insist upon a universal system of education with a curriculum consisting of all those common elements which make for national integrity and national safety.[15]

There is large place for uniformity in an educational system; uniformity in business matters; uniformity of aims and principles for the school as a whole; uniformity of aims and principles for particular subjects of study; and uniformity in many practical matters touching instructions.[16]

[15] Coffman, L. D. "The War and the Curriculum," in Educational Administration and Supervision, Jan., 1918, p. 22.

[16] McMurry, F. Ibid., p. 143.

A committee on course of study in the Bureau of Education has been making an investigation throughout the United States of all content materials useful to farm folks. The National Country Life Association has a committee on rural education. The National Society for the Study of Education has been promoting uniformity in essential content through its numerous investigations and reports. Some States are using courses of study or outlines in certain subjects which were prepared for use in other States. The interstate mobility of both teachers and children increases the need for a common course of study. These and other forces have greatly stimulated a present tendency toward a nationalized curriculum.

The State courses of study contain a certain number of topics found in all or nearly all of them. (Cf. lists of topics, Chs. VI to X.) The body of knowledge which can thus be brought together, with some modifications, includes much information of which every American has need. There are social and economic problems national in scope. There are problems peculiar to a State, but typical of problems in other States. There are problems truly representative and suggestive in character, which with proper adaptation are fully as valuable as those of wider application. There is also a considerable body of fact, subject matter requiring drill, of which every normal child in the Nation has need. The following pages show that a national course of study setting forth definite aims, sound methods and minimal materials for study, is useful as a guide and standard for the improvement of the State courses.

SUMMARY AND RECOMMENDATIONS.

1. In this survey of State courses for rural elementary schools the leading purpose has been to present, analyze, and explain the content of prescribed courses in all they contain and to interpret the findings in the light of progressive opinion and of scientific investigations.

2. Courses of study were available from 44 States. The 44 courses used are fairly uniform in size of print and of page. This made it possible to compare the number of pages assigned to outlines in various subjects in the several grades. The courses contain 9,431 pages, or 214 pages on the average.

3. With few exceptions the courses were prepared for use in all public elementary schools. A few States now provide courses for use in rural schools exclusively. This is a commendable change, as the problems in one-teacher schools and in graded city schools are very different.

4. Replies of letters sent to State departments of public instruction indicate that in most States (36) courses of study are found generally in the hands of all rural teachers, and that the provisions of such

courses are adhered to closely. This conclusion drawn from official statements does not agree, however, with reports contained in State educational surveys. Statements to the contrary may be found in the reports of State surveys of Ohio, South Dakota, Wyoming, Arizona, Alabama, Virginia, Illinois, and Delaware. They show in general that many teachers do not follow courses of study intelligently. To this condition some of the contributing causes are these: Outlines do not permit of intelligent use; outlines not adapted to schools or to teachers using them; teachers unfamiliar with course-of-study provisions; lack of supervision.

5. The real course of study is too often the textbook, followed literally and exclusively. This practice could be redirected by causing teachers to become familiar with the prescribed course of study through attendance at summer schools, through teachers' meetings, and through circular letters and direct correspondence.

6. For the production of a unified body of useful knowledge, it is advisable to receive the cooperative contributions of administrators, supervisors, successful teachers, and representative farmers. Thoroughly organized courses require the assistance of an editor or an editorial staff.

7. There is a growing demand for a uniform minimum curriculum for the Nation. This survey seeks to justify this claim.

8. The following are suggested as principles of guidance: (*a*) Courses especially designed for use in rural schools; (*b*) courses which the average teacher can use effectively; (*c*) rural teachers familiar with the course-of-study provisions; (*d*) courses prepared through extended cooperative influences.

23606—23——2

Chapter II.

CHARACTER AND CONTENT OF GENERAL SUGGESTIONS.

TOPICS TREATED.

Courses of study are usually not limited to outlines in the various subjects. Often many pages are given to the discussions of topics of a general nature. In a number of courses such topics are all included under the term "General suggestions." It requires an average of 20 pages in each of 44 State courses for the treatment of all such topics. This represents approximately one-tenth of the total number of pages (214) that would be in each course of study if the courses were all of equal length (Ch. IV, p. 34). The topics of a general nature which appear most frequently are listed in Table 1.

TABLE 1.—*Average number of pages in 44 State courses of study given to topics of a general nature, and the per cent each of these numbers is of an average of 214 pages per course.*

Topic.	Number of courses.	Number of pages.	Average number of pages.	Per cent per course.
General suggestions	31	222	5.0	2.3
Daily programs	31	160	3.7	1.3
Libraries, reading circles	27	206	4.7	2.2
Brief outline of course	16	70	1.6	.7
Miscellaneous topics	24	222	5.0	2.3
Total	44	880	20.0	8.8

The miscellaneous topics in this table include, first, those that add little if anything of value to the making of a good course of study. The history of education, history of the course of study, schoolhouse construction, and sociology are topics of this character. There is a second group of general topics appearing in State courses which should be treated in connection with outlines of closely related subjects. Scientific temperance, famous pictures, boys' and girls' clubs, simplified spelling, good roads, and poultry culture are typical of such topics. A list of these topics is given in connection with the organization of subjects of study in Chapter IV. Proper treatment of a third group of general topics appearing in State courses would materially improve a course of study and tend to influence the work of schools in a most helpful way. Those appearing to the writer as most suggestive for such treatment are listed below:

1. Practical aims of the school.
2. Helpful changes and improvements in the curriculum.
3. General plan of the course of study.
4. Relative importance of subjects.
   (*a*) Grouping of related subjects.
   (*b*) Major subdivisions of each group.

5. Organization of classes and daily programs for schools of one or two teachers.
6. Proper methods of study; the problem and project methods emphasized.
7. Intelligent use of the course.
8. Standard tests and promotions.
9. Efficiency of instruction and professional progress.
10. A teacher as judge of her own work.
11. Standardization of schools.
12. Important recently enacted laws.
13. Textbooks and their grade distribution; if no State adoption, how to judge and select textbooks.
14. Minimal reference library, children's and teachers' reading circle.
15. Needed supplies and materials.
16. Beautification of school and community.
17. Local social and industrial organizations.
18. School and community spirit and cooperation.

AIMS OF THE SCHOOL.

The teacher needs to have a clear, broad conception of the purposes of the school and the true meaning of her work, if the details of her daily problems are to be dealt with in their proper perspective. She needs to keep the central purposes of her work clearly in view to prevent wandering about in matters of trivial importance. For the proper direction of instruction, courses of study should contain the general aims of teaching, stated in clear, simple language.

For want of stated aims, teachers often go blindly about their work, following the textbook in covering ground. The following teaching aims are the most important among those mentioned in State courses; they appear infrequently and in variously formed statements:

1. To give children a practical, useful education.
2. To train them for efficient citizenship in our democracy.
3. To promote their health and maintain their physical strength.
4. To train them in dealing justly with their fellows.
5. To know the world of facts with which they must cope.
6. To promote their happiness through the right use of leisure.
7. To give right direction to the best methods of earning a living.

The writer believes that there should appear in the outlines of a course of study recurring statements of the way detailed recommendations contribute to the general aims of the school. Aims need to be made a part of the content of the course of study, if they are to be any large factor in the direction of the average teacher's work. No large measure of help is likely to be given to the thousands of inexperienced and ill-trained rural teachers by courses containing general aims on the first pages only, and making no reference to these aims in the outlines on later pages. Schools can not function properly if the work of children drops to a low plane of mechanical routine without raising the question of why or in what ways it contributes to their needs of life. Teachers who follow intelligently the outlines of a course of study in which the selection and organization of the

materials of instruction were governed by important educational aims are not apt to wander far from the main purposes of the school.

METHODS OF TEACHING AND OF STUDY.

A majority of the State courses give teachers little or no help in conducting recitations or in teaching children how to study. To give methods of instruction may not be regarded by some writers as a function of the course of study. The professional preparation of a teacher often appears to be largely assumed. It is a matter of common knowledge that many rural children have not been taught proper methods of study and that unsupervised rural teachers have often used poor teaching methods. This is a fair indication that courses of study should be manuals of method as well as outlines of content. There are courses that serve the double purpose of selecting and organizing content and of presenting methods of teaching and study. The Minnesota and New Jersey courses are examples. Such courses guide teachers in selecting teaching materials and show how the materials may be taught. The most important place in a course for suggestions on proper methods is doubtless in connection with the subject matter to be taught given in the subject outlines. Helpful additional suggestions may be given by evaluating general methods of teaching and learning. These may properly be given in the fore part of a course of study and as a part of an introduction to the outlines of each subject.

STANDARDS FOR JUDGING INSTRUCTION.

Standards by which a teacher may judge her own work seldom appear in State courses; and yet large returns can scarcely be expected without some teaching standards. The teacher who knows the standards by which her supervisors would judge her work is most likely to put forth efforts to improve. Teaching becomes purposeful when teachers strive to meet the standards set by a course of study.

In illustration of standards useful to a teacher, the following, taken from the Montana Rural Course (p. 36), are suggestive:

1. Is my preparation good—
   - (*a*) In knowledge of subject matter?
   - (*b*) In the use of supplementary and reference material?
   - (*c*) In the assignment of lessons?
   - (*d*) In the use of blackboard or illustrative materials?
2. Do my recitation periods—
   - (*a*) Have an aim?
   - (*b*) Develop initiative in pupils?
   - (*c*) Discriminate between essentials and nonessentials?
   - (*d*) Stimulate real thinking on the part of pupils?
   - (*e*) Develop motive for study?
   - (*f*) Show good organization of subject matter?
3. Am I using textbooks as a guide rather than an end?
4. Am I training my pupils in the best methods of study, so that they can gradually work independently?

5. Am I laying as much stress on habits and attitudes as I am on knowledge of subject matter?

6. Is my work well balanced between book knowledge and motor activity; between the education for making a living and the education for leisure?

One of the most important functions of a good course of study is to supervise instruction. For this purpose, a course should contain well organized and correlated bodies of related materials, set forth among the best methods of teaching and harmonized by useful educational aims and standards. In the Minnesota course, for example, teaching materials for each grade in each of several subjects are preceded by teaching aims and followed by standards of instruction. A large measure of supervision is made possible through definite standards included in each year of each subject as outlined in the course of study.

PLAN OF THE COURSE OF STUDY.

Earlier in this chapter it was pointed out that courses of study contain many pages on program making and other topics of a general nature. In practically all courses the pages devoted to such topics precede or follow the outlines of school subjects.

The outlines are arranged alphabetically according to subject, in groups of related subjects, or in chance order. The plan of grouping subjects, such as is adopted for use in this survey (Chs. VI to X), has the advantage of keeping the number of subjects outlined within the limits of possibility for one-teacher schools to handle with facility. Grouping also aids in limiting the number of subjects for regular recitations by any grade of pupils to their ability to do good work in all subjects taken.

The extent to which 17 school subjects outlined in State courses are broken up into separate outlines for the various grades or classes is given in Table 2.

TABLE 2.—*Number of courses dividing teaching materials in each of 17 subjects into outlines of various units of time.*

Subjects.	Not divided.	Years or grades.	Semester or quarter.	Months.	Total.
Reading		30	9	5	44
Language	1	28	10	5	44
Spelling	4	32	5	3	44
Handwriting	12	27	3		42
Arithmetic	1	28	9	6	44
History	1	29	9	5	44
Civics	2	24	10	5	41
Manners and morals	16	9	1	1	27
Geography	3	29	9	3	44
Hygiene	10	25	7	1	43
Physical education	22	4			25
Nature study	10	21	6	1	38
Agriculture	10	25	9		44
Household arts	15	17	3		35
Manual arts	14	13	1	1	29
Drawing	16	21	5	1	43
Music	12	20	4	1	37

Practice would leave the outlines for physical education and manners and morals undivided into units of work to be followed in instruction; divide the work for two or three classes in handwriting, drawing, and music; have all classes in these five subjects use the same period on the daily program; provide separate outlines for alternate years in certain grades in hygiene, nature study, agriculture, household arts, and manual arts; limit class work in civics to one or two upper years; and outline the remaining subjects—reading, language, spelling, arithmetic, history, and geography—by years or grades, with a possible further division on the semester basis. The practice most common for most subjects is outlines by years. In States where all rural schools open approximately at the same time and have fairly even term lengths, the yearly or semester plan appears to be the most desirable. The semester plan is growing in favor and is commendable for use in States where the rural schools have fairly uniformly long terms. This plan is followed in city courses and should be equally well adapted to rural courses used in schools with terms of fairly equal length. The monthly plan reduces the course to considerable "lockstep" procedure. It allows limited freedom of adaptation of material to particular groups of children.

STANDARDIZATION OF SCHOOLS.

Standardization of one-teacher schools has not yet received extensive consideration in courses of study. Little space in State courses has been given the topic. There are, however, plans for standardizing rural schools in 26 States,[1] and the writer believes the topic to be of sufficient importance for State courses to warrant its more general discussion.

There are two important phases of standardization. The one is concerned with school facilities, such as buildings, equipment, and school supplies, and with the duties and responsibilities of pupils, patrons, and school trustees. Standardization of this phase is comparatively easy, because of its relatively permanent unchanging character. The other phase has to do with instruction and includes the teacher's share of responsibility in securing a standard school. The frequent change of teachers makes this phase of standardization relatively difficult. It is this phase, however, that requires the larger share of attention in a course of study. The most useful part of standardization for the teacher, and therefore for the course of study, is that part which pertains directly to the teacher's work in matters of instruction. A course of study may well contain, however, in addition to standards for the teacher, brief explanations of laws or

[1] Lathrop, Edith A. Status of Standardization of the Rural Schools of the United States. Univ. of Va. Extension Series, Nov., 1919, p. 8.

plans regarding standardization and a copy of the rating or score card used.

OTHER GENERAL TOPICS.

Supplies and materials.—Every rural school should have a supply of books and materials adequate to its needs in carrying out the provisions of a course of study. It is an advantage to a teacher to have classified lists of books and materials at hand for ready reference. There should be lists of textbooks, reading-circle books, and library books for supplementary reading and reference. Such lists are more fully discussed in Chapter XI. There should also be lists of materials for primary and industrial work, either apart from or in connection with reading, arithmetic, and other subjects. These lists should contain those supplies and materials mentioned in the outlines of various school subjects. When reference to materials is made in the outlines of subjects only, which represents prevailing practice, important materials may be easily overlooked in ordering. Suggestive lists save a teacher's time in checking supplies on hand and in ordering others early in the school year.

Community activities.—One frequently hears that a teacher's task is not confined to the four walls of a schoolroom. The teacher has responsibilities of an educational nature outside. Here is a field for helpful suggestions to which courses have given little attention. Only occasionally can one find a course treating such topics as neighborhood organizations, community meetings, community leadership, or a teacher's social obligations. If a course is to be a teacher's guide in all matters pertaining to her work, then it would appear that a course is not complete until it includes directions for intelligent participation in outside educational affairs. Ways and means may be suggested by which a teacher may become an influential factor in social and industrial organizations. A teacher may receive help from her course on methods of developing a good school and community spirit. Beautifying school grounds, roadside, and home surroundings is a matter of interest to every community. The writer believes that topics of this nature deserve treatment in a State course. The average rural teacher has need of the help which a course can supply in giving directions to educational affairs outside of a school. A course of study, as well as a school, has doubtless a function to perform in ministering to the educational needs of a community.

SUMMARY AND RECOMMENDATIONS.

1. The 44 State courses surveyed contain an average of 214 pages each. Of this number, 20 pages are devoted to general suggestions, consisting of everything outside of discussions or outlines of subjects.

2. The most frequently mentioned general topics are daily programs and libraries. Among those less frequently given are aims of the school, plan of the course, and intelligent use of the course.

3. The number of courses setting forth the aims of the school is not commensurate with the importance of such aims. Curricula standards for judging instruction are wanting quite as much. Both are needed as a means of organization, as a guide to teachers, and as an aid in supervision. To prevent teachers from wandering far from the main purposes of the school, there should appear recurring statements of the way detailed recommendations contribute to these teaching aims.

4. A majority of the courses give teachers little constructive help in using the best teaching methods. It is quite as important that courses of study be manuals of method as outlines of content. Courses helpful in methods are needed to improve the poor teaching known to prevail in many rural schools.

5. The subject matter should be so selected and organized as to meet, in so far as possible, the needs of the schools for which intended. Teaching materials and reference and library books selected should be on a level with the ability of rural children. It is preferable to make reference to textbooks and other books at various points in the outline after they have been prepared. The teacher's task is to take the general subject matter as outlined and adapt it to her environment.

6. A large amount of supervision through the course of study is an object of worthy and earnest endeavor. Important considerations are specific aims for each subject and for each grade outline provided; recurring statements of the way detailed recommendations contribute to these aims; selection, relative emphasis, and arrangement of content materials; effective methods of instruction; and clearness, simplicity, and definiteness in every specification.

7. All but 4 of the 17 common-school subjects under survey are outlined by years in a majority of the State courses. A few courses go further, in breaking up the work into semester or even monthly outlines. The yearly or semester plan appears to be the most serviceable where all the rural schools of a State have fairly long terms.

8. There are other topics of a general nature which the writer believes deserve treatment in State courses. Types of such topics are standardization of schools, useful supplies and materials, and community activities of an educational nature. Topics of this character are treated in courses only occasionally.

9. The dominant purpose of a course of study may be considered that of promoting good teaching in every possible way. As a means to this end the following provisions are suggested:

(*a*) Influence of the course extended through effective supervision.
(*b*) Helpful general suggestions on important school problems.
(*c*) Chief aims of the school, reinforced by adequate detailed recommendations.
(*d*) Standards of achievement provided for each class in each subject.
(*e*) Teaching materials especially valuable to rural children.
(*f*) Organization adapted to rural school conditions.
(*g*) Prominence given to the best teaching methods.
(*h*) Definite directions in the use of teaching materials.
(*i*) Preparation of outlines, followed by assignment of page reference.

Chapter III.

ORGANIZATION OF ONE-TEACHER SCHOOLS.

PROBLEM.

One of the problems in one-teacher schools difficult of adequate solution is the organization of a school into classes in a way that will secure maximum efficiency in all school work. The present chapter seeks to aid teachers and program-makers in the solution of this problem.

MATERIAL.

Twenty-six model programs, taken from as many State courses, were used. Twenty of the programs provide classes for eight grades. The programs in courses of six Southern States provide classes for only seven grades. Upon investigation it was found that seventh-grade averages for all 26 programs were only slightly different from the same grade averages of 20 programs, not including those in the South. As these differences in averages were found largely negligible, the writer felt justified in using the 26 programs to show Nation-wide practice.

It is only fair to assume, other things being equal, that the average pupil can do but a year's work in a year, wherever he may be. If he happens to be a seventh-grade pupil in the South, he has probably not completed more work equally well than the average seventh-grade pupil in the North. In fact the southern pupil appears to be at a disadvantage because of the shorter terms and weaker compulsory education laws known to have existed in the South.[1] It is not considered unwise, therefore, to include in this survey of programs for one-teacher schools the programs in Southern State courses.

There are only 20 programs which include the eighth grade. It is obvious that the true average for this grade can be determined only by using 20 as a unit of measure. The true average in grades below the eighth is not always found by using the same unit, for the reason that the programs do not all provide recitation periods for all grades in all subjects. There are also programs which make no provisions for such subjects as manual arts or household arts. All 26 programs have to be taken into account to determine what they have to offer

[1] U. S. Dept. of Agric. Bul. No. 132, 1915. Correlating Agriculture with the Public School Subjects of the Southern States. pp. 69, 75.

in the distribution of time among the various subjects and grades. In the discussion the low eighth-grades averages resulting from the use of the higher unit of measure are corrected.

WHAT THE MODEL DAILY PROGRAMS CONTAIN.

The typical program in State courses contains only the time to begin and the time to close a recitation and the subjects or classes in which children recite. Variations from this type most frequently observed, more especially in recently published courses, are the addition of a study program and changes in the use of certain terms.

Some model daily progams give time to begin, number of minutes for recitation periods, classes reciting, subject (or subjects) for recitation, and study programs for each class (or grade). Such a program explains the organized work of the schools and in practice appears to be the best.

Some striking changes in terminology are observable. On one program, for example, the term "recess," used by the Jesuits 350 years ago, has been replaced by "organized play." On another, "class-teacher periods," has replaced the belittling name of recitation. McMurry's apt suggestion of calling study periods "thinking periods" is nowhere in evidence, possibly because constructive thinking and not mere reproduction of facts should also go on in all recitation periods. Other terms, such as luncheon and play hour, appearing on a few programs, offer some relief from the sameness and monotony of tradition. It is encouraging for those in supervisory positions to observe now and then teachers assuming the air of freedom by finding meaningful and expressive terms for their programs.

NUMBER OF DAILY RECITATION PERIODS.

The range of daily recitation periods on 26 model programs for one-teacher schools is from 21 to 38, with 85 per cent of the programs limiting the number of such periods to 25.

The number of daily recitation periods in any school is partly determined by the number of grades. On 20 programs this number is 8. The Southern States, with seven grades, provide as many daily recitations as other States with eight grades. The Illinois course contains a program of 32 recitations, and 225 minutes weekly are allowed on this program for the ninth and tenth grades. The Kansas Rural Courses, 1914, gives 38 daily recitations, 9 of which are in arithmetic and 4 are in the ninth grade.

The New Hampshire course, with six grades, contains a program with the fewest daily classes. This program was not used, however, in compiling data for this chapter, although the plan may have commendable features.

Another important factor in determining number of daily recitations is number of subjects. State courses contain outlines for 17 subjects (Ch. IV). However, not one program in the courses provides regular recitation periods in all these subjects. Some subjects, as manual training or agriculture, are often given but one, two, or three regular periods per week. Several subjects, such as agriculture and household arts, are limited to regular work in a few grades or even one grade. Occasionally a subject is outlined in a course of study without any provision made in the model program of that course for the teaching of such subject. Further, regular periods for important matters other than school subjects are usually provided. This is nearly always true of opening exercises, and occasionally, of supervised study. The complexity in program making arising out of 17 subjects and 8 grades, with time allowance for outside activities, may be illustrated from the weekly time schedule contained in the Arizona State course. Reducing the maximum number of recitations provided on this schedule to a daily basis, more than 70 daily recitations would be required—unthinkable in a one-teacher school.

ALTERNATION AND COMBINATION OF GRADES.

One method of securing efficiency in one-teacher schools is through reduction of daily recitations by the plan of alternation and combination of grades and classes. This plan is recommended in 73 per cent of 44 courses, and in most States it is made mandatory.

The plan provides for the combination of grades 3 and 4, 5 and 6, and 7 and 8 into classes C, B, and A, respectively, as is shown in Table 3. The combinations of grades 2 and 3, 4 and 5, and 6 and 7 occur in those Southern States which organize their elementary schools into seven grades.

TABLE 3.—*Relative frequency of grade combinations in school subjects in 26 model programs in as many State courses of study.*

Subjects.	Number of programs combining—						
	Grades 1 and 2.	Grades 2 and 3.	Grades 3 and 4.	Grades 4 and 5.	Grades 5 and 6.	Grades 6 and 7.	Grades 7 and 8.
Reading	13	5	24	6	19	5	19
Language	15	5	16	6	16	6	19
Spelling	3	2	18	10	26	12	21
Arithmetic	10	1	16	5	22	6	20
History	4	4	4	4	11	5	18
Geography	1	2	10	8	15	8	13
Hygiene	4	4	3	4	12	4	10
Nature study	11	5	8	1	5	.....	.....
Agriculture	.....	.....	.....	2	1	5	6
Average	8.1	3.1	10.9	5.1	13.1	5.6	14
Percentage	14	5	18	9	22	9	23

In reorganizing their courses a few States have arranged the material of a two-year period in a way that will best fit the adopted plan. They furnish two outlines fairly equal in difficulty for each of the A, B, and C classes. This enables a child to pursue either outline before the other without being seriously handicapped by so doing. The outlines for grades 3, 5, and 7 are sometimes known as lower-division work, and those for grades 4, 6, and 8 as upper-division work. Children entering odd years take outlines in regular order by grades. It is only the children entering even years that are affected by pursuing upper-division before lower-division outlines.

It is not always possible to arrange the material for a two-year period with such even distribution as not to interfere at some points with the natural development of the child's ability. When children of such varying ability are so grouped in a class as to be unable to do identical work, provision is often made to have children pursue their regularly yearly outline. In C reading, for example, children of the third reader may read their lessons to the children of the fourth reader, and vice versa. This gives purpose to oral reading, creates a larger class audience, stimulates interest through motive, trains for efficiency in listening and in the conveyance of thought, and retains the class idea. Such provisions are probably needed mostly in reading for class C and in arithmetic. By the fifth grade, when children should have learned to read, combination difficulties in reading largely dissappear.

Practically all the programs of Southern State courses combine grades 4 and 5, and 6 and 7 in reading, language, arithmetic, geography, history, and hygiene, and grades 6 and 7 in agriculture.

The first three grades are usually not combined, except for some general lessons. A school thus becomes organized into five classes. By combining grades 2 and 3 on a seven-year course, four classes are organized, and grade 1 is still a class by itself. A school of seven grades usually has grade combinations different from those in a school of eight grades, but the number of classes and recitation periods per day are largely the same.

The plan of alternating and combining grades is obviously not without its points of weakness. If seventh and eighth grade outlines for an eight-year course are well balanced in difficulty, then it must follow that the step from the sixth to the eighth is excessive, while that from the eighth to the seventh is negligible. This difficulty is partly met by teachers holding the advanced half of a class of pupils responsible for more and better work than the other. It is evident, too, that the plan affects two groups of children in a given class differently because of the two plans of promotion—regular for children entering odd years and irregular for children entering even years. It

is clearly impossible, however, for a one-teacher school of eight grades to have as many daily recitation periods as are found in all grades in schools with two to eight teachers. By combination of the two grades twice the amount of teacher time may be given the pupils of each grade. Adjustments to local needs are less difficult where the plan of alternation and combination is used. The early adoption of this plan in some States, its continued and extensive use in many, and the extent of its success in thousands of country schools, have given it a rightful place in all large, well organized, one-teacher schools. It is safe to say that the plan is the most workable yet devised for use by the average rural teacher.

ALTERNATION AND COMBINATION OF SUBJECTS.

Another method of securing efficiency through reduction of recitations is by alternation and combination of subjects. The 26 model programs contain as many as 47 different combinations of two or more subjects. Table 4 gives those most frequently mentioned.

TABLE 4.—*Relative frequency of combination and alternation of subjects in 26 model programs in as many State courses of study.*

Subjects combined or alternated.	Number of programs.	Most frequent grades.
History and civics	15	7–8
Writing and drawing	12	All classes.
Reading and spelling	8	1–4
Reading and history	7	3–5
History and geography	7	5–6
Geography and hygiene	6	5–6
Language and spelling	6	1–3
Reading and language	5	1–3
Hygiene and agriculture	5	7–8

There is an evident tendency to provide one outline for history and civics, to alternate writing and drawing by days through the week, to do the same with agriculture and hygiene in upper grades, to alternate history with geography or geography with hygiene in intermediate grades, and to make various combinations of subjects in lower grades.

THE AVERAGE DAILY PROGRAM.

The number of classes for a subject is determined by the number of grades given a regular period on the program for that subject. Table 4 shows that the number of periods in which children recite in reading, language, spelling, in arithmetic is relatively large, as all grades recite in these subjects.

On the average daily program, provision is made for children of each of the first four grades to recite five or six times each day; for the fifth and sixth to recite six or seven times daily; and for the

seventh and eighth (except in the south) to recite seven or eight times each day (Table 5). The more helpless and immature children have one or two fewer recitations a day than upper-grade children.

TABLE 5.—*Average number of daily recitation periods in 26 model programs, distributed by grades and subjects.*

Subjects.	Class D.		Class C.		Class B.		Class A.		Total.
	Grade 1 (E).	Grade 2 (D).	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.[1]	
Reading	2.3	1.9	1.5	0.9	1.0	1.0	0.9	0.3	9.8
Spelling	.4	.7	.8	.8	1.0	1.0	1.0	.8	6.5
Language	.9	1.0	1.0	1.0	1.0	1.0	1.0	.8	7.7
Arithmetic	.7	1.0	1.0	1.0	1.0	1.0	1.0	.8	7.5
Nature study	.6	.6	.6	.3	.3	.2	.1	.1	2.8
Agriculture				.1	.1	.2	.6	.4	1.4
Geography	.1	.1	.5	.8	1.0	1.0	.9	.5	4.9
Hygiene	.2	.3	.3	.4	.7	.7	.7	.4	3.7
History	.2	.2	.2	.3	.6	.7	1.0	.8	4.0
Civics							.4	.6	1.0
Total	5.4	5.8	5.9	5.6	6.7	6.8	7.6	5.5	49.3
Class average	5.6		5.75		6.75		6.55		24.65

[1] Programs of six Southern States have no eighth grade.

Ungraded subjects are:

Writing	1.0	Manual arts	0.3
Opening exercises	1.0	Household arts	.2
Music	.7	Physical education	.1
Drawing	.7	Manners and morals	.1

Without combination of grades or alternation of subjects, the average daily program for all grades would contain 49 class periods. With alternation and combination this number may be reduced to 24 or fewer.

Seventh-grade averages for 26 programs total three-tenths of a daily recitation higher than the same grade averages, and six-tenths of a daily recitation higher than the eighth-grade averages, of the 20 programs for eight grades. These differences were considered small enough to justify including in Table 5 the programs of six courses providing recitation periods for all grades but the eighth. The true eighth-grades averages based on the 20 programs providing for eight grades are equal to the seventh-grade averages of the same subjects, except in civics, where the average is fifteen-hundredths of a recitation more, and in geography, hygiene, and agriculture, where it is not over two-tenths of a recitation less in each subject.

DISTRIBUTION OF RECITATION TIME.

The teacher of a one-room school has the problem of adjusting her program so as to give each class that amount of time for study and recitation of each subject which the pupils of the class require for its

mastery. It is often a difficult matter to arrange a time schedule doing justice to all members of a class or school and to both study and class periods.

Two State courses of study give a time schedule for various subjects as used in city schools. Such a schedule is not adapted to one-teacher schools. The amount of time for each subject and for each grade must be determined by situations in the schools to which time schedules are applied.

It is shown in Tables 3 and 4 that programs combine grades and subjects in various ways. This has the effect of increasing the recitation time the average program gives to each grade, and, therefore, to all grades. If each grade were to recite alone the same number of minutes as it is given by grade combinations, the total time for all grades would be far in excess of the time of a school day. By investigation it was found that a two-fifth reduction in average time was necessary to bring the total time within the compass of a 6-hour day or a 1,800-minute week. These reduced averages are given in Table 6.

TABLE 6.—*Average number of minutes per week (reduced to a 1,800-minute basis) allotted for recitation of class periods in each subject and in each grade on 26 model programs in as many State courses of study.*

Subjects.	Class D.		Class C.		Class B.		Class A.		Total.
	Grade 1 (E).	Grade 2 (D).	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.[1]	
Reading	84	72	63	54	42	39	38	26	418
Spelling	.....	.....	20	20	24	26	24	18	132
Language	26	26	33	38	36	42	48	36	285
Arithmetic	18	27	39	45	48	48	54	45	324
Nature study and agriculture	9	9	9	9	6	9	15	9	75
Geography	.....	.....	15	27	32	33	33	20	160
Hygiene	3	3	3	6	12	18	18	12	75
History and civics	.....	3	3	6	15	20	45	39	131
Handwriting and drawing	.....	.....	.....	.....	.....	.....	.....	.....	50
Opening exercises and music	.....	.....	.....	.....	.....	.....	.....	.....	50
Manual arts and household arts	.....	.....	.....	.....	.....	.....	.....	.....	25
Organized play	.....	.....	.....	.....	.....	.....	.....	.....	75
Grade total	140	140	185	205	215	235	275	205	1,800
Class total	280		390		450		480		1,800
Minutes per day	56		78		90		96		[2] 360

[1] Programs of six Southern States have no eighth grade.
[2] Forty minutes for the whole school as one class.

Average number of minutes per week given to the two upper grades by the 20 eight-year programs.

	Seventh.	Eighth.		Seventh.	Eighth.
Reading	36	36	Geography	33	25
Spelling	23	23	Hygiene	21	14
Language	45	45	History and civics	41	52
Arithmetic	51	51			
Agriculture	15	14	Total minutes	265	260

In four subjects the averages for these two grades are the same, but in geography, hygiene, and history and civics eighth-grade averages are lower by 7 to 11 minutes per week. If the programs of six Southern States were not included in Table 6, the number of minutes per day for class A (seventh and eighth grades combined) would be increased by 9. The eighth-grade averages of 20 programs are higher by 2 to 13 minutes per week in the several school subjects than the averages as shown in the table. These differences are not sufficiently large to justify excluding the programs of the South. Allowance as here shown must be made for the low eighth-grade averages given in the table.

One of the most striking facts revealed by the table is the excessive amount of time allotted upper-grade children. This injustice to the younger children is brought out graphically in Figure 1. It is unfair to the first-grade child to receive but 140 minutes a week of the teacher's time, when the seventh-grade child with all his acquired ability to be self-helpful gets 275 minutes of her time. Is it any wonder a first-grade child soon becomes a repeater when he is given but 28 minutes of the teacher's time a day? When model programs in State courses recommend this, what may be expected of teachers? It is no small wonder that State surveys have called attention in strong terms to this fault on teachers' programs:

> First-grade children receive less than one hour per day of direct attention of the teacher. Time allotments to different grades is such as to sacrifice interests of more numerous and dependent pupils in lower grades to interests of fewer and less dependent pupils in upper grades.[2]

The school subjects are not fairly represented on model programs. Sixty per cent of the teacher's time is allotted to reading, arithmetic, and language. The programs make the "tool" subjects dominant, and that teachers should give very much of their time to drill and mechanical routine is a natural result. Arithmetic is in the lead in all but the lower grades, and on many programs it alone occupies practically one-fourth of the time.

> Time allotments to various studies are in general so chaotic that program-making appears to depend on the whim of individual teachers rather than to follow any recognized principles.[3]

---

[2] Public School Survey and Report, 1919, pp. 99, 100. Virginia Educational Commission.

[3] Ibid., p. 214.

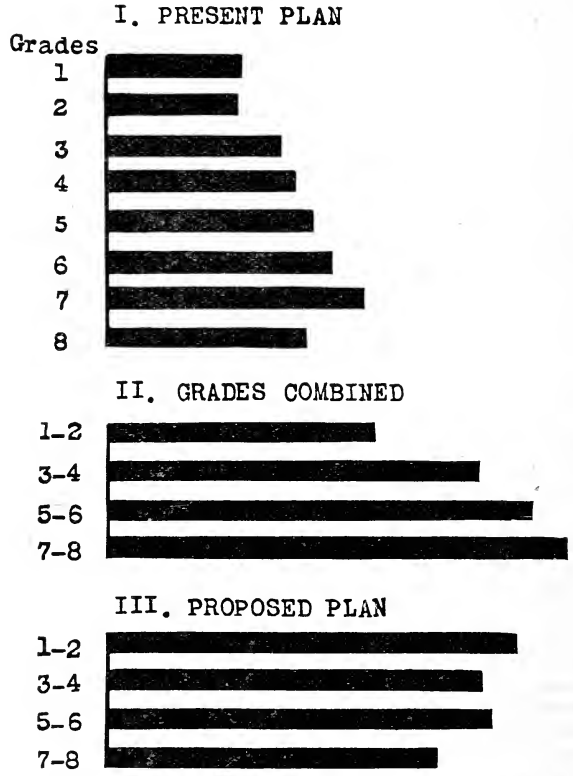

FIGURE 1.—The bars represent (I) the average number of minutes per week of the teacher's time, 26 model programs in as many State courses of study give to each grade; (II) the same time allotment with grades combined into classes; and (III) the proposed time allotment as given in Table 7. (Data for I and II are from Table 6.)

A PROGRAM OF 24 CLASS PERIODS.

It is possible to arrange a program that gives greater justice to the larger number of more helpless children and maintains a more even balance among the subjects.

TABLE 7.—*Proposed balanced schedule of class periods for one-teacher schools with eight grades represented.*

Classes and subjects.	Periods weekly.	Minutes per day.
Class D [1]	35	85
Reading and spelling (class E)	15	36
Reading and spelling (class D) (Reading includes phonics, spelling, word study.)	10	25
Language (correlate hygiene, civics, history)	5	12
Numbers	5	12
Class C [2]	25	75
Reading	5	15
Spelling	5	10
Language (correlate hygiene, civics, history)	5	15
Nature study and industrial arts (correlate home geography)	5	20
Arithmetic	5	15
Class B [3]	20	75
Reading (grades 5 to 8)	3	25
Spelling (grades 5 to 8)	2	28
Language (correlate hygiene)	4	15
Arithmetic	4	15
Geography (grades 4 and 5)	4	16
History and civics	3	20
Class A [4]	20	70
Language	4	15
Arithmetic	3	15
Agriculture (grades 5 to 8), (correlate industrial arts)	4	20
Geography (grades 6 and 7)	3	20
Hygiene (grades 6 and 7)	3	15
History and civics	3	20
All [5]	20	55
Opening exercises and community songs	5	10
Handwriting and drawing	5	15
Physical education and organized play	10	30

[1] Nature study, industrial arts, class C; change of seat work between periods.
[2] Grade 4 geography, class B.
[3] Grade 6 geography, class A; agriculture and industrial arts, class A.
[4] Reading and spelling, class B.
[5] Industrial arts; handwork in lower grades through educative seat work. Manual arts and sewing in upper grades correlated with agriculture. The hot lunch at noon. More extensive project work in eighth grade.

The schedule in Table 7 is proposed for the larger one-teacher schools of eight grades. An important factor in its determination is the relative frequency of alternation and combination of grades and subjects appearing on 26 programs (Tables 3 and 4). Another factor is the extent of correlation recommended by 44 State courses. Correlation is treated in Chapter V and summarized in Table 23 (p. 62). The writer takes the position that program time should be given only to those subjects for which outlines or discussions are provided in the printed course of study pursued. Thus, the relative amount of average space 44 State courses give to each grade in each subject has some significance in program-making. For information

on this the reader is referred to Chapter IV, and particularly to Table 15 (p. 40).

With some modifications the above-mentioned factors have determined the grouping of subjects and the organization of classes in the balanced schedule. One modification, for example, is in the distribution of time. The amount of teacher-time proposed represents an increase for lower grades and a decrease for upper grades from the average on 26 programs as given in Tables 4 and 5. The time differences are graphically shown in Figure 1. The proposed schedule provides for 24 daily class periods, 4 of which are for the whole school. This is 1 fewer than the number to which 85 per cent of the programs would limit daily periods.

The time schedule in Table 8 represents the weekly time allotments of Table 7 presented in greater detail. It provides a fairly even number of clock hours of the teacher's time for the children of each grade. Each class receives from 2 to 2½ hours of her time every day. The number of recitation periods for each class is also fairly even. In two of these periods, opening exercises and writing, the whole school is treated as one class. This corrects the fundamental weakness pointed out in Table 5, of neglecting the younger children.

TABLE 8.—*Proposed number of minutes per week for 24 daily class periods, distributed by grades and subjects.*

Subjects.	Class D.		Class D.		Class B.		Class A.		Total.	Periods per day.
	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.		
Reading	180	125	75	75	75	75	75	75	455	6.6
Language	60	60	75	75	60	60	60	60	255	3.6
Spelling	(Reading)		50	50	56	56	56	56	106	1.4
Handwriting and drawing[1]	75	75	75	75	75	75	75	75	75	1.0
Arithmetic	60	60	75	75	60	60	45	45	240	3.4
History and civics[2]	(Language)		(Language)		60	60	60	60	120	1.2
Geography	(Nature study)		64		64	60	60	(3)	124	1.4
Hygiene	(Language)		(Language)		45	45	(3)		45	.6
Physical education	150	150	150	150	150	150	150	150	150	2.0
Nature study and agriculture[4]	100	100	100	100	80	80	80	80	180	1.8
Opening exercises and music	50	50	50	50	50	50	50	50	50	1.0
Clock hours per day	2.3	2.1	2.2	2.4	2.4	2.5	2.5	2.2	6.0	.....
Classes daily	8	7	7	8–	7–	7+	7	6–	.....	24.0

[1] Handwriting, 3 days; drawing, 2 days.
[2] Correlate manners and morals with civics and with all school work.
[3] Eighth grade should continue geography and hygiene, if work is not completed inthe seventh.
[4] Correlate industrial arts with agriculture. (Refer to note, Table 7.)

Another weakness observed in the model programs is the unfairness with which some subjects are represented. While this weakness is probably not entirely overcome, it is largely removed by the use of the idea of correlation (see Ch. VI), combination of grades and subjects, and alternation of classes. By a comparison of total minutes

per week for each subject in Table 6 with Table 8, it will be seen that nature study-agriculture is given 140 per cent more time, and physical education, with which hygiene may be correlated, is given 100 per cent more. Arithmetic has been cut down by 26 per cent of time, and language and spelling are given less time. There is a tendency to give less time to arithmetic and more time to agriculture.[4]

The two major points of weakness discoverable on programs in State courses may be overcome by the readjustment as here given, but it should be suggested that too strict adherence to time allotment on any program, when minutely divided into many recitation periods and various subjects, interferes with wholesome progress of school work. Programs are to serve the school, but all too often slavish use is made of them. A program is a necessity in organization, but such variations from it which serve the best interests of the children affected should doubtless be made. The truly resourceful teacher who has mastered the art of teaching effectively uses her programs to meet the changing needs of her classes and of each child.

SUMMARY AND RECOMMENDATIONS.

1. Twenty-six of the courses contain model programs for recitations in the various subjects of study in the grades. Eighty-five per cent of these programs limit the number of daily recitations to 25. This is made possible by the plan of alternation and combination of grades and classes recommended by 73 per cent of the 44 courses under survey. Alternating subjects by days through the week is a device often used. The device is designed especially for one-teacher schools with eight grades.

2. The grades usually combined are the third and fourth, the fifth and sixth, and the seventh and eighth. The exceptions are mainly for programs of seven grades in some of the Southern States. Grades one and two are often combined for all classes except in reading. Classes are commonly known by letter: A, B, C, D, and sometimes E for the first grade.

3. Yearly outlines for combined grades on alternate years should be well balanced in difficulty to give children every possible advantage in pursuing work on a level of their ability.

4. While the plan of alternation and combination is not without its points of weakness, it is safe to say that the plan is the most workable yet devised for use by the average rural teacher.

5. The relatively fewer upper-grade children are favored with more recitation time and more class periods on the average program than the more numerous primary children.

[4] U. S. Bu. of Educ. Bul. No 41, 1919. An Educational Study of Alabama. p. 102.

6. The programs assign 60 per cent of the teacher's time to arithmetic, reading, and language. Arithmetic is in the lead in all but the lower grades, and on some programs it alone occupies practically one-fourth of the time.

7. A balanced program of 24 daily classes for one-teacher schools, designed to do justice to all children and to all subjects, is submitted (Table 7). In its production the writer was guided by the results of this investigation, but practice was not strictly followed. The program submitted increases the amount of teacher-time for children in the lower grades. It also contains what the writer believes to be a wiser distribution of time among the school subjects.

8. Some principles for the organization of courses appear to be fairly well established:

(*a*) Materials of instruction should be selected to meet children's immediate and future needs and organized into relatively few subjects for regular class study.

(*b*) All separately outlined subjects should receive a regular place on the program. Teaching materials for subjects not given such a place should be woven into the outlines of related subjects that are included on the program.

(*c*) Subject outlines for each year in each class should be well balanced in difficulty and alternated by years.

9. Some principles for the organization of rural schools also appear to be well established:

(*a*) Recitation periods should be most frequent in primary grades.

(*b*) Lower grades require even more of the teacher's time than upper grades.

(*c*) As pupils advance through the grades, recitation periods should be gradually lengthened.

(*d*) Relative difficulties presented in the learning process largely determine the program time to be allotted to each subject.

(*e*) Grades should be combined into classes, and subject outlines for each class should be alternated by years.

(*f*) Every program should provide for play and recreation, for study and for recitation. Seat work and organized play must not be neglected. It is even more important to teach children to study than to recite. Study periods should, when possible, follow recitation periods.

(*g*) There are fundamental subjects in each class for daily class instruction. There are others that need not be assigned a place on the daily program.

(*h*) There are subjects in which instruction should be given every year. There are others in which regular periods of instruction should be limited to certain grades.

(*i*) Periods most favorable for study should be given the most difficult subjects. The physical fitness of children to do the work assigned should govern the place of a subject on the daily program.

10. The meaning of these principles is made clear in the schedule of classes proposed for one-teacher schools. By use of this schedule as a guide it should be comparatively easy for any teacher to make out a program adapted to her school. Such a schedule may be found to be even more helpful to the average rural teacher than the model program itself.

11. There are important standards of adjustment outside of the course of study that should be considered in program-making. Some of these are:

(*a*) Equalized term lengths for all children (9 months).

(*b*) Full enrollment and perfect attendance by every normal-minded healthy child of school age.

(*c*) Quality of instruction improved and supervision extended.

12. The following principles of guidance in providing programs in courses for one-teacher schools are suggested:

(*a*) Programs provided which contain 24 or fewer classes daily, including two organized play periods.

(*b*) Recitation time among classes and subjects proportioned in a way that will do justice to all children.

(*c*) The time for study and recitation among the school subjects wisely distributed

(*d*) The program adjusted as far as is possible to the conditions in the largest number of schools for which the program is intended.

(*e*) The outlines organized according to the plan of alternation and combination of grades and of subjects.

Chapter IV.

RELATIVE IMPORTANCE OF ELEMENTARY SCHOOL SUBJECTS.

NAMES FOR SCHOOL SUBJECTS.

This chapter undertakes to discover the relative importance of elementary school subjects as revealed by their prominence in 44 State courses.

The number of elementary school subjects treated in State courses of study is 17. The subjects are known in some courses by different names. In the case of most subjects the writer has chosen the name appearing most commonly. In a few subjects, as language, hygiene, and household arts, that name was chosen which appealed to the writer as most expressive of what a subject should be. In almost all cases there was no question as to the subject to which an outline belonged. In case of doubt, as in the good-roads outline of the Colorado course, the teaching materials provided in the outlines determined the subject with which outlines were associated. For the purpose of this survey outlines under different names have been organized according to the following plan:

Reading—Phonics, literature.
Language—Grammar, composition, picture study.
Spelling—Orthography, word study.
Handwriting—Writing, penmanship.
Arithmetic—Numbers, bookkeeping.
History—Social science, biography.
Civics—Citizenship, thrift, government, social life.
Manners and morals—Humane education, character study.
Geography—Good roads, community studies.
Hygiene—Physiology, sanitation, scientific temperance.
Physical education—Physical culture, physical training, calisthenics, gymnastics, folk dancing, plays and games.
Nature study—Elementary science, simple experiments (chemical, physical).
Agriculture—Poultry culture, club projects.
Household arts—Sewing, cooking, home making, domestic art, domestic science, home economics, school luncheons.
Manual arts—Handwork, construction work, seat work, handicraft, manual training.
Drawing—Art education, color work, fine arts.
Music—Vocal music, singing.

NUMBER OF OUTLINES PROVIDED.

In most courses subjects are outlined. In some, only general discussions of the subjects are given. The 17 subjects are either outlined or given general treatment in the 44 courses. The number of courses containing outlines or general suggestions in the various subjects are presented in Table 9.

TABLE 9.—*Number of State courses of study providing outlines in general suggestions* [1] *and in each grade for each of the 17 subjects.*

Subjects.	Number of courses in—									Total.
	General suggestions.[1]	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	
Reading	30	44	44	44	43	43	43	42	33	44
Language	30	43	43	43	43	43	43	42	36	44
Spelling	30	36	37	40	39	38	38	36	32	44
Handwriting	28	28	30	30	30	28	28	24	21	42
Arithmetic	33	43	43	43	43	43	43	43	37	44
History	33	27	31	32	33	38	42	42	35	44
Civics	14	3	4	5	6	9	10	20	27	41
Manners and morals	23	12	12	12	10	8	8	9	9	27
Geography	28	15	18	33	41	42	41	39	21	44
Hygiene	32	25	26	27	27	30	32	26	22	43
Physical education	24	8	8	8	8	6	6	6	5	25
Nature study	22	29	30	27	24	19	15	9	6	38
Agriculture	22	5	5	5	6	11	15	29	29	44
Household arts	24	2	3	3	4	12	18	20	20	35
Manual arts	21	13	12	13	13	15	14	17	15	29
Drawing	39	26	26	29	27	27	27	26	21	43
Music	33	22	22	22	21	21	21	21	17	37

[1] General suggestions as here used explained in Ch. II.

All of the 44 courses contain outlines or general discussions for 7 of the subjects. Four additional subjects are considered in more than 40 courses. There are no subjects treated in fewer courses than 25, and only 3 subjects are treated in fewer than 35. The fact that a majority of the 17 subjects are treated in almost all of the State courses is itself highly significant.

There are variations in the number of grade outlines provided for each subject. The table shows that nature study is a lower-grade subject, and that agriculture, household arts, and civics are found almost exclusively in upper grades. In other subjects the number of outlines are more evenly distributed by grades. Relatively few courses give grade outlines for physical education and for manners and morals.

METHOD OF MEASURING THE LENGTH OF COURSES.

It was pointed out in Chapter I that the 44 courses are nearly uniform in size of print and of page. The length of a full page in a number of courses was measured and found to be $7\frac{3}{8}$ inches. From this a linear scale divided into 10 equal parts was constructed, and this scale was used to determine to the nearest tenth of a page the

number of pages the State courses gave to each subject and to each grade. A full page in the Utah course measured only eight-tenths of a page on the scale used. This course contained the shortest pages and represented about the only striking exception to courses with pages of uniform length. Estimates were made for print especially large, such as at the beginning of outlines, or for print quite small. Care was exercised in this to insure uniformity, although the relative amount of such print was small enough to make the factor very largely negligible. The method made possible exact measurements of the length of outlines.

While this method is entirely impartial, it is not without its limitations. Spelling, a formal subject, for example, is allotted less space for its outlines in three-fourths of the courses than is allotted to geography, a content subject. Agriculture, a subject passing through the period of formulation and introduction, is given more than 16 pages in one-half of the courses. A subject may be relatively new or old; it may be largely a formal or a content subject; it may be comparatively easy or difficult to analyze a subject into details of greater or less value; and more or less space may be required, depending upon the nature of the subject, the public demand for it, or the amount of program time allotted to it. These and other factors determine the relative importance of subjects and their space allotments in courses of study. The method of quantitative treatment used for the purpose of this survey seeks to determine only the relative emphasis given school subjects by the factors of time and space assignments. Practice thus revealed may serve as a valuable guide in compiling courses, although the relative importance of school subjects can not be fully determined by the method used.

NUMBER OF PAGES.

The courses contain 8,551 pages allotted to all subjects. The number of pages assigned to each grade in each subject is shown in Table 10.

One of the most striking features of the distribution is the relatively large amount of space in each subject allotted to ungraded material. Before the outlines by grades in each school subject are given, the courses usually give considerable space to the discussion of several topics which may be grouped under the term "General suggestions." The topics bear the same relation to a subject as the general suggestions mentioned in Chapter II bear to the whole course of study. They treat such topics as aims of the subject, best methods of instruction, selection and relative emphasis of content, motivation of

material, concrete teaching helps, use of textbooks, needed library books and materials, and correlation with other subjects. The discussions are often as valuable as the outlines for various grades.

TABLE 10.—*Total number of pages of space allotted to general suggestions and to each grade in each subject in 44 State courses of study.*

Subjects.	General suggestions.	Grades.								Total.
		1	2	3	4	5	6	7	8	
Reading	166	203	78	79	67	58	51	50	61	813
Language	123	112	93	111	100	90	94	111	124	958
Spelling	93	26	29	31	29	30	26	30	28	322
Handwriting	98	21	14	14	18	11	11	10	10	207
Arithmetic	139	101	127	155	119	123	124	102	91	1,081
History	102	23	30	35	40	73	117	213	182	815
Civics	68	1	1	4	5	13	8	109	68	277
Manners and morals	99	5	4	5	4	4	4	8	10	143
Geography	81	17	20	86	152	147	158	119	80	860
Hygiene	154	18	17	24	29	32	56	83	47	460
Physical education	251	10	11	13	16	9	8	9	9	336
Nature study	118	60	48	45	38	27	23	10	3	372
Agriculture	161	6	5	6	6	19	43	203	259	708
Household arts	191	1	1	1	2	11	27	103	108	445
Manual arts	80	21	12	9	12	13	9	21	21	198
Drawing	112	36	28	26	27	25	26	24	24	328
Music	115	22	17	17	12	12	11	11	11	228
Total	2,151	683	535	661	676	697	796	1,216	1,136	8,551

Another feature revealed by the table is the unequal distribution of space allotment. Arithmetic is given the largest amount of space of any subject, and manners and morals the least. The seventh grade is assigned more than twice the space that is assigned to the second. In a few grades of two subjects there is allotted no more than one page in all 44 courses, while the largest amount of space given to any grade in any subject is 259 pages.

One reason for this unequal distribution of space allotment is the unequal number of outlines in the various grades and subjects provided, as revealed by Table 9. It should also be observed that to provide one outline for each grade in each of 17 subjects in all 44 courses, 748 different outlines would be required. To make this number, 80 additional outlines are needed.

The outlines also vary greatly in length. There are 243 outlines containing each less than 5 pages, and 377 that contain less than 10. On the other hand, there are 136 outlines with 20 or more pages, 35 with 40 or more pages, and 17 with more than 50 pages. This variation in the length of different outlines is an important factor in the uneven distribution of total space allotment. The distribution of the number of courses with varying lengths of outlines is given in Table 11.

TABLE 11.—*Number of courses provided in each subject by 44 States, distributed according to the number of pages assigned to each outline.*

Subjects.	Number of courses of study.									
	0.1 to 4.5 pages.	5 to 9.9 pages.	10 to 14.9 pages.	15 to 19.9 pages.	20 to 24.9 pages.	25 to 29.9 pages.	30 to 34.9 pages.	35 to 39.9 pages.	40 to 49.9 pages.	50 or more pages.
Reading	4	8	11	1	10	3	3		3	1
Language	2	8	8	8	5	2	3	1	4	3
Spelling	24	9	5	3	2	1				
Handwriting	26	10	5	1						
Arithmetic	3	5	8	3	8	5	4	3	3	2
History	7	8	11	8	1	1	2	1	2	3
Civics	27	7	1	2	1	1	1			1
Manners and morals	19	5	2	1						
Geography	4	12	5	5	8	1	1	2	4	2
Hygiene	19	7	4	7	2	1	1	1	1	
Physical education	16	1	1	3	1		1	1		1
Nature study	16	6	6	5	2	2	1			
Agriculture	13	5	4	9	3	3	4		1	2
Household arts	15	9	1	4	1	1	2			2
Manual arts	12	9	6	1	1					
Drawing	20	13	6	1		1	2			
Music	16	12	8	1						
Total	243	134	92	63	45	22	25	9	18	17
Per cent	36	20	14	9	7	3	4	1	3	3

GRADE SPACE ASSIGNED TO EACH SUBJECT.

The percentage of total space allotted of 44 courses to general suggestions and to each grade that is assigned to each subject is given in Table 12.

The largest grade space assignments are made to reading in the first grade, to arithmetic in the second and third, to geography in intermediate grades, and to history and agriculture in the upper grades. Language is prominent in every grade. The percentages of grade space decrease in reading from the first to the eighth grade; in history and agriculture they increase. Relatively little grade space is allotted to each of several subjects, especially to physical education and to manners and morals.

Table 12 is useful as a guide in determining the subjects in each grade for which it is desirable to provide outlines in a course of study. If practice is a safe criterion for judgment, it may be concluded that there should be outlines for practically every year in reading, language, and arithmetic; that geography should be outlined for intermediate grades; nature study, in lower grades; hygiene, in the sixth and seventh; history, in the four upper grades; and agriculture and household arts, in the seventh and eighth. This may be concluded with a high degree of certainty where figures in the table are comparatively large. Conversely, the same can not be concluded where figures are small, for reasons pointed out earlier in this chapter. Table 9, for example, shows that grade outlines in spelling are provided in almost all courses, and the small figures in Table 12 are an indication of the brevity of spelling outlines. This may also be observed from Table 11. In regard to subjects in a given grade where the percent-

age of space allotment is small because of the few grade outlines provided, it is safe to say that provision for the teaching of such subjects is made in the outlines of other subjects, or not at all. These data indicate the subjects in each grade for which it is desirable to provide regular periods on the daily program as well as outlines for study. They have served the writer a useful purpose in arranging the balanced schedule of class periods given in Table 7.

TABLE 12.—*Per cent of total space allotment to general suggestions and to each grade that is assigned to each subject in 44 State courses of study.*

[Derived from Table 10.]

Subjects.	General suggestions.	Grades.								Per cent per subject.
		1	2	3	4	5	6	7	8	
Reading	8	30	15	12	10	8	7	4	5	10
Language	6	18	17	17	15	13	12	9	11	11
Spelling	4	4	5	5	4	4	3	2	2	4
Handwriting	5	3	3	2	2	2	1	1	1	2
Arithmetic	6	15	24	23	18	18	16	8	8	13
History	5	4	6	5	6	10	15	17	16	10
Civics	3	.....	.....	1	1	1	1	9	6	3
Manners and morals	5	1	1	1	1	1	1	1	1	2
Geography	4	2	4	13	22	21	20	10	7	10
Hygiene	7	3	3	4	4	5	7	7	4	5
Physical education	12	1	2	2	2	1	1	1	1	4
Nature study	5	9	9	7	6	4	3	1	.....	4
Agriculture	7	1	1	1	1	3	5	17	23	8
Household arts	9	.....	.....	.....	.....	1	3	8	10	5
Manual arts	4	3	2	1	2	2	1	2	2	2
Drawing	5	5	5	4	4	4	3	2	2	4
Music	5	3	3	2	2	2	1	1	1	3
Total	100	100	100	100	100	100	100	100	100	100

SUBJECT SPACE ASSIGNED TO EACH GRADE.

The percentage of total space allotted by 44 courses to each subject that is assigned to general suggestions and to each grade is given in Table 13.

TABLE 13.—*Per cent of total space allotment to each subject that is assigned to general suggestions and to each grade in 44 State courses of study.*

[Derived from Table 10.]

Subjects.	General suggestions.	Grades.								Total.
		1	2	3	4	5	6	7	8	
Reading	20	25	10	10	8	7	6	6	8	100
Language	13	12	10	12	10	9	10	11	13	100
Spelling	29	8	9	10	9	9	8	9	9	100
Handwriting	47	10	7	7	9	5	5	5	5	100
Arithmetic	13	9	12	14	11	11	12	10	8	100
History	13	3	4	4	5	9	14	26	22	100
Civics	25	.....	.....	1	2	5	3	39	25	100
Manners and morals	69	3	3	3	3	3	3	6	7	100
Geography	10	2	2	10	18	17	18	14	9	100
Hygiene	34	4	4	5	6	7	12	18	10	100
Physical education	74	3	3	4	5	3	2	3	3	100
Nature study	32	16	13	12	10	7	6	3	1	100
Agriculture	24	1	1	1	1	2	6	28	36	100
Household arts	43	.....	.....	.....	1	3	6	23	24	100
Manual arts	40	10	6	5	6	6	5	11	11	100
Drawing	34	11	9	8	8	8	8	7	7	100
Music	50	10	8	7	5	5	5	5	5	100
All subjects	25	8	6	8	8	8	10	14	13	100

One of the striking features about Table 13 is the large amount of space in several subjects that is given to general suggestions. In 10 subjects the amount exceeds that of any grade. One-fourth of the space allotted to all subjects is assigned to ungraded material. For some subjects this amount is much larger than for others. This is particularly true of physical education and of manners and morals. Where practice conforms so largely to ungraded outlines or discussions of a general nature as in these two subjects, there is evidently no need for graded outlines.

In the grades of any given subject where the figures are quite small, it appears desirable to correlate the material with the outlines of other subjects. Agriculture in the first four grades, for example, could be made a part of the nature-study outline. This table, too, has been a valuable guide in determining the program of time distribution of Table 7, as it has been assumed that regular class periods should be provided for only those grades in each subject for which outlines are provided, and vice versa.

PERCENTAGE OF SPACE ALLOTMENT.

The number of pages assigned by 44 courses to all grades and subjects was presented in Table 10. By turning this table into percentages Table 14 was derived. In this table the hundredth part of the space allotted to any subject in any grade may be observed, and if attention is not given to the decimal point the table can be read in thousandths. It presents the characteristic features of space already noted.

TABLE 14.—*Per cent of total space allotment (8,551 pages) that is assigned to general suggestions and to each grade in each subject in 44 State courses of study.*

[Derived from Table 10.]

Subjects.	General suggestions.	Grades.								Total.
		1	2	3	4	5	6	7	8	
Reading	1.9	2.4	0.9	0.9	0.8	0.7	0.6	0.6	0.7	9.5
Language	1.4	1.3	1.1	1.3	1.2	1.1	1.1	1.3	1.4	11.2
Spelling	1.1	.3	.3	.4	.3	.4	.3	.4	.3	3.8
Handwriting	1.2	.2	.2	.2	.2	.1	.1	.1	.1	2.4
Arithmetic	1.6	1.2	1.5	1.8	1.4	1.4	1.4	1.2	1.1	12.6
History	1.2	.3	.4	.4	.5	.9	1.4	2.5	2.1	9.7
Civics	.8	.....	.....	.....	.1	.2	.1	1.3	.8	3.3
Manners and morals	1.2	.1	.....	.1	.....	.....	.....	.1	.1	1.6
Geography	.9	.2	.2	1.0	1.8	1.7	1.8	1.4	.9	9.9
Hygiene	1.8	.2	.2	.3	.3	.4	.7	1.0	.5	5.4
Physical education	2.9	.1	.1	.2	.2	.1	.1	.1	.1	3.9
Nature study	1.4	.7	.6	.5	.5	.3	.3	.1	.....	4.4
Agriculture	1.9	.1	.1	.1	.1	.2	.5	2.4	3.0	8.4
Household arts	2.2	.....	.....	.....	.....	.1	.3	1.2	1.3	5.1
Manual arts	.9	.2	.2	.1	.2	.2	.1	.2	.2	2.3
Drawing	1.3	.4	.3	.3	.3	.3	.3	.3	.3	3.8
Music	1.3	.3	.2	.2	.2	.2	.1	.1	.1	2.7
Total	24.9	8.0	6.3	7.8	8.1	8.1	9.5	14.3	13.0	100.0

It is clearly impossible for one-teacher schools to provide regular class periods for all subjects in each grade in which courses of study contain outlines. It is quite as impossible for children of average ability to have 17 subjects for daily study and recitation. The problem is to bring the number of classes, and therefore the number of outlines, within the range of reasonable possibility for teachers and pupils in one-teacher schools.

Table 14 contains suggestions for the solution of this problem. It is less desirable to provide graded outlines in the grades of each subject where the percentages of total space allotment are especially small than to provide them where the percentages are quite large. If grade outlines were provided for only those grades in each subject where the per cent as shown in Table 14 is more than 0.5, the number of subject outlines for any one grade would be between 4 and 9.

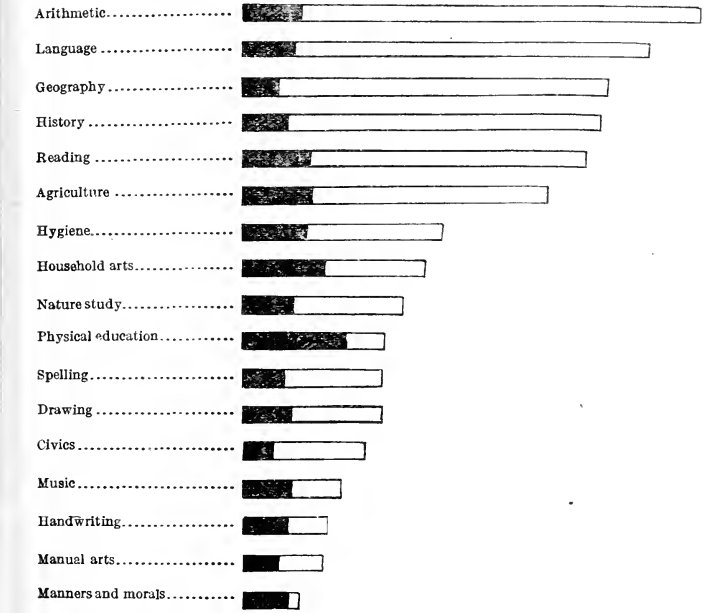

FIGURE 2.—Percentage of total space in 44 State courses of study allotted to 17 school subjects. Portion in black indicates space devoted to general suggestions. Portion in outline indicates space devoted to the grades in each subject.

By weaving together the teaching materials of history and civics into one outline, and those of agriculture and household arts into another, the number of outlines for any one grade need not exceed 7. In the case of outlines for grades where the percent-

ages are less than 0.5, three methods may be suggested—to combine the teaching materials with other subjects; to provide outlines in a subject for combination of certain grades ranging in number from 2 to 4; or to provide general suggestions, perhaps in the form of ungraded outlines. These suggestions have aided the writer in arranging the balanced schedule of class periods contained in Table 7.

THE AVERAGE COURSE OF STUDY.

The total number of pages allotted to each grade in each subject (Table 10) was divided by 44, the total number of courses, to determine the average space allotment. The results as given in Table 15 show what the length of any outline would be if all 44 courses would share equally in the amount of space assigned. This method of measuring the central tendency is particularly advantageous in those subjects in which very few outlines for certain grades are provided.

TABLE 15.—*Average number of pages 44 State courses give to general suggestions and to each grade in each subject.*

Subjects.	General suggestions.	Grades.								Total.
		1	2	3	4	5	6	7	8	
Reading	3.8	4.6	1.8	1.8	1.5	1.3	1.1	1.1	1.4	18.4
Language	2.8	2.5	2.1	2.5	2.3	2.1	2.1	2.5	2.8	21.7
Spelling	2.1	.6	.7	.7	.7	.7	.6	.7	.6	7.4
Handwriting	2.2	.5	.3	.3	.4	.3	.3	.2	.2	4.7
Arithmetic	3.1	2.3	2.9	3.5	2.7	2.8	2.8	2.3	2.1	24.5
History	2.3	.5	.7	.8	.9	1.7	2.7	4.8	4.1	18.5
Civics	1.5	.....	.....	.1	.1	.3	.2	2.5	1.5	6.2
Manners and morals	2.2	.1	.1	.1	.1	.1	.1	.2	.2	3.2
Geography	1.8	.4	.7	2.2	3.5	3.3	3.6	2.7	1.8	20.0
Hygiene	3.5	.4	.4	.5	.7	.7	1.2	1.9	1.1	10.4
Physical education	5.7	.2	.3	.3	.4	.2	.2	.2	.2	7.7
Nature study	2.7	1.4	1.1	1.0	.9	.6	.5	.2	.1	8.5
Agriculture	3.7	.1	.1	.1	.1	.4	1.0	4.6	5.9	16.0
Household arts	4.3	.....	.....	.....	.....	.3	.6	2.3	2.5	10.0
Manual arts	1.8	.5	.3	.2	.3	.3	.2	.5	.5	4.6
Drawing	2.5	.8	.6	.6	.6	.6	.6	.5	.5	7.3
Music	2.6	.5	.4	.4	.3	.3	.3	.3	.3	5.4
Total	48.6	15.4	12.5	15.1	15.5	16.0	18.1	27.5	25.8	194.5

The average course of study contains 214 pages, 20 pages of which are assigned to topics of a general nature aside from the school subjects (Ch. II). The average number of pages allotted to the subjects is 194.5.

This average amount of space is distributed very unevenly among the several grades and subjects. The range of averages for any grade is largest in the eighth (5.9 pages) and least in the second (2.9 pages). For any subject the range of grade averages is largest in agriculture (5.9 pages) and least in spelling or manners and morals (0.1 page). The largest space assignment to any grade in any subject is in eighth grade agriculture (5.9 pages). The distribution of total average space for all subjects varies from 12.5 pages in the second to 27.5 pages in the seventh. The large number of pages given to general suggestions (48.6 pages) is especially worthy of notice.

This uneven distribution of average space assignment is due in part to the irregular number of courses provided for the various grades and subjects, shown in Table 9. It is also due to the varying lengths of outlines in the several grades and subjects the 44 courses contain. This was indicated earlier in this chapter, but it is best illustrated below by the variableness of percentages of space assignments. Possibly the deeper causes inherent in the nature of each subject, such as formal rather than content material, have more to do with the unequal lengths of grade outlines than either number of courses or lengths of individual outlines.

VARIABLE NATURE OF DISTRIBUTION OF SPACE.

To determine the extent of variability in the distribution of space assignments, percentages rather than number of pages were used. By dividing the number of pages a course of study gave to one subject by the total number of pages given to all subjects, percentage ratios for the school subjects were determined. Similarly the number of pages a course gave to general suggestions and grade outlines of a subject divided by the total number of pages the course allotted to that subject gave the percentage ratios for grade distribution of space assignments.

There is almost every degree of space allotment given to each school subject. Of the space given to all subjects, one course gives 41 per cent to agriculture, another 40 per cent to arithmetic, and another 31 per cent to geography. Three courses give to two subjects over half the space given to all subjects. The range in the per cent of space given to 17 subjects is from zero to 41 per cent (Oregon). The least variation in relative length of outlines is represented by the Montana course, in which the range is from 1 to 13 per cent of total space.

TABLE 16.—*Medians of percentages of space allotted in each of the 44 State courses of study to each subject that is assigned to general suggestions and to each grade.*[1]

Subjects.	Medians of percentages.								
	General suggestions.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
Reading	11	21	10	9	8	9	6	7	4
Language	6	12	10	11	9	9	10	10	10
Spelling	16	9	7	8	8	9	8	7	8
Handwriting	42	6	6	5	5	4	4	2	.....
Arithmetic	6	10	13	12	10	10	10	9	7
History	9	2	3	4	4	10	12	20	20
Civics	.....	.....	.....	.....	.....	.....	.....	.....	32
Manners and morals	3	.....	.....	.....	.....	.....	.....	.....	.....
Geography	3	.....	.....	7	17	15	17	13	.....
Hygiene	17	2	2	3	4	6	8	9	2
Physical education	65	.....	.....	.....	.....	.....	.....	.....	.....
Nature study	5	12	12	8	5	.....	.....	.....	.....
Agriculture	2	.....	.....	.....	.....	.....	.....	30	31
Household arts	12	.....	.....	.....	.....	.....	.....	.....	.....
Drawing	31	4	4	5	6	5	7	5	.....
Music	32	5	1	2	.....	.....	.....	.....	.....

[1] No medians for manual arts.

To offset the unfavorable effect of very large and very small percentages of space, medians for all subjects and for each grade in each subject were computed. Forty-four courses were used as a basis for finding the medians in each subject. Those medians are given in Table 16.

The medians for each grade in language range from 9 to 12 per cent; in spelling, from 7 to 9 per cent. In agriculture there are grade medians for the two upper grades only, and these medians are comparatively large. In all grades where there were fewer than 22 courses represented (Table 9), no medians were found. The large median of percentages under general suggestions in physical education indicates a very common plan of providing ungraded material in this subject. This is true to less degree of handwriting, music, and drawing.

In every grade in every subject, except language, spelling, arithmetic, history, and geography, the first quartile range from the medians is zero. In no grade is this first quartile range higher than 9 per cent, except in first-grade reading (14 per cent), in seventh-grade history (11 per cent), and in intermediate grades in geography.

The third quartile range from the medians represents a variation from zero in all grades in each subject with fewer than 11 courses (Table 9) to 95 per cent in eighth-grade civics and 50 per cent in agriculture in the upper grades. The third quartile measure is nearly the same for all grades in spelling, 12 to 14 per cent; in drawing, 10 or 11 per cent; and in manual arts, 4 to 6 per cent. It is less constant in language, 11 to 19 per cent; in handwriting, 7 to 14 per cent; in arithmetic, 12 to 19 per cent; and in music, 6 to 12 per cent. The range of this quartile is larger for first-grade reading (32 per cent); in the first three grades in nature study, 19 and 20 per cent; and in household arts for the seventh and eighth, 24 per cent. For general suggestions this measure is 100 per cent in six subjects.

RELATIVE PROMINENCE OF SUBJECTS.

The elementary subjects are ranked according to their prominence in State courses of study. For this purpose five measures were used:

1. Average number of pages 44 courses assign to each subject. (Table 15.)
2. Median number of pages 44 courses assign to each subject.
3. Percentage of total space assigned to all subjects that is devoted to each subject. (Table 12.)
4. Medians of percentages of total space in each course of study devoted to each subject.
5. Percentage of recitation time 26 model programs assign to each subject. (Computed from Table 6.)

Arithmetic is the most prominent subject in the curriculum. It ranks first in Table 17 on every count save on percentage of recitation

time. But even here it receives approximately one-fifth of total time on the daily program. State survey reports tend to show that many children spent altogether too much time on this subject. Often one-fourth of the day (the second quarter) is given to it. The large amount of space in courses and time on programs given to arithmetic suggests the possibility of reducing the amount to allow of more time and attention to other subjects crowding the curriculum.

TABLE 17.—*Rank of elementary school subjects as determined by five measures of their prominence in 44 State courses.*

Subjects.	Rank.	Pages per course.	Median number of pages.	Per cent of total space.	Medians of per cents of space.	Per cent of class time.	
						26 programs.	50 cities.[1]
Arithmetic	1	25	21.1	13	11.0	19.1	13.3
Language	2	22	16.3	11	10.5	17.0	11.4
Reading	3	19	14.8	10	9.5	23.8	17.4
Geography	4	20	15.0	10	10.0	9.5	7.1
History	5	19	13.1	10	8.0	6.9	6.5
Agriculture	6	16	15.1	8	5.5	2.1	.....
Hygiene	7	10	6.0	5	4.0	4.1	4.4
Nature study	8	9	5.4	4	3.5	2.3	[2]
Spelling	9	7	4.5	4	3.0	9.2	6.4
Household arts	10	10	3.9	5	3.0	.2	.....
Drawing	11	7	5.4	4	3.0	.9	6.1
Music	12	5	4.2	3	2.5	1.1	4.8
Handwriting	13	5	3.1	2	2.0	2.1	5.3
Civics	14	6	2.6	3	2.0	.9	[2]
Physical education	15	8	.5	4	1.0	.2	4.2
Manual arts	16	5	2.3	2	1.5	.4	5.6
Manners and morals	17	3	.8	2	1.0	.2	.....
Total	.....	194	[4] 191	100	[4] 3.0	100.0	92.5

[1] Fifty cities placed here for comparison only. They are not used in ranking. History includes civics; hygiene includes nature study. Manners and morals (ethics) is included with opening exercises.—*Fourteenth Year Book, Part I. p. 26.*

[2] Hygiene.

[3] History.

[4] Median.

Language and reading hold almost as prominent place as arithmetic, and the content subjects of geography, history, agriculture, hygiene, and nature study rank next in order. Agriculture, but recently introduced, already holds one of the foremost places in the curriculum. There is an evident tendency to lengthen the outlines of these content subjects at the expense of those more formal. As outlines of content subjects are usually limited to fewer grades, their prominence in the curriculum is even more marked.

The outlines in handwriting are usually short and ungraded, but a higher place is accorded this subject on programs. Its importance is not fully tested by its prominence in State courses.

Physical education has sprung into importance since the war, as shown by the amount of State legislation in its favor, but courses of study rank the subject as one of the lowest. In one-teacher schools it is given attention only in play periods. The change from this custom due to public opinion and legislation remains to be seen.

A number of subjects which receive little instruction by regular class periods also rank lowest in space allotments for outlines. This is particularly true of manners and morals, a subject taught largely through incidental and indirect means. It is also largely true of physical education, drawing, music, civics, and manual arts. Longer outlines have been provided in agriculture, household arts, and nature study, but there has been little recitation time provided for them. Readjustments of time on programs are needed to meet the increasing popular demand for more attention to some of these subjects. The reader is referred to Table 8 for the amount of recitation time the writer has recommended for each subject.

For purposes of comparison the amount of time given in 50 cities to various subjects is included in Table 17.[1] It is very evident that time allotments for city schools can not be used in rural schools. There is not one subject in which the proportions are exactly the same. The only agreement appears to be in relatively large amount of time given to some of the fundamental subjects—arithmetic, reading, language, spelling, geography, and history—and the small amount of time to other subjects. To drawing, music, handwriting, physical education, and manual arts, city programs give much more time, while the rural programs allot more time to geography, history, reading, language, and arithmetic. Drawing and music can usually not be taught to such good advantage in one-teacher schools, for want of the special teacher or of adequate supervision. It is unjust to small rural schools to superimpose city programs upon them. Time allotments for the two schools do not agree.

SUMMARY AND RECOMMENDATIONS.

1. Seventeen elementary school subjects are outlined in 44 State courses of study.

2. The most common or the most suggestive names were chosen for the various subjects, and outlines under different names were associated with the subject to which they evidently belonged.

3. The number of outlines provided is 89 per cent of a full representation, i. e., an outline or general discussion for each subject in every course.

4. Outlines for every grade in every one of the 17 subjects are provided in one or more courses. This represents too many outlines to be used to advantage in one-teacher schools. This number needs to be materially lessened.

5. The number of pages for the outlines in each subject and for each grade was computed to determine the relative prominence of the subjects in State courses. The method of quantitative treatment of time

[1] Holmes, "Time Distribution by Subjects and Grades in Representative Cities." Fourteenth Yearbook of the National Society for the Study of Education, Part I, 1915. p. 26.

on daily programs and space in printed courses represents but two factors in determining the relative importance of school subjects. Practice thus revealed can, therefore, be only suggestive.

6. The total space assignments to each grade and to each subject are strikingly uneven, ranging from one page in several grades of each of two subjects to 259 pages in eighth-grade agriculture. This is due to the unequal number of outlines provided and the uneven lengths of individual outlines.

7. The amount of space allotment to ungraded materials, or general suggestions, in each subject is surprisingly large. One-fourth of the space assigned to all subjects contains discussions of a general nature. Such suggestions are often as valuable and necessary as the outlines.

8. Of 668 subject outlines provided, there are 243 containing fewer than 5 pages and 35 containing more than 40 pages.

9. The percentage of space allotted to each grade that is assigned to each subject is exceedingly uneven. In the first grade, for example, the range is from zero to 30 per cent. The distribution is an index to the subjects in each grade for which it is desirable to provide outlines and regular periods for class recitation on the school program (Table 12).

10. The percentage of space allotted to each subject that is assigned to each grade is fairly even in the more formal subjects, such as spelling, and in subjects in which all pupils in one-teacher schools are grouped into one class, such as music. In other subjects the space distribution by grades is very uneven (Table 13).

11. The thousandths part of total space (8,551 pages) assigned to each grade in each subject is given in Table 14 in the form of percentages. For all grades in each subject where the thousandths part is less than 5 it is suggested to combine the teaching materials with other subjects, to provide outlines for certain advisable combinations of grades in the same subject, or to provide ungraded outlines or courses for all pupils organized into one class.

12. The average course of study contains 214 pages, 194.5 of which are assigned to the subjects (Table 15). The unevenness of the distribution is similar to that of total space assignment given in Table 10.

13. The distribution of total space in each State course of study that is assigned to each grade in each subject varies from zero to 41 per cent. Medians of percentages of space assignment in each course present a range from zero in 59 grade positions of several subjects to 32 per cent in eighth-grade civics. For general suggestions the medians in physical education and in several other subjects represent a very high percentage of space, which indicates a general practice of providing ungraded rather than graded material in these subjects.

14. The courses for each grade vary in length from paragraph discussions to outlines of many pages. The variability is greatest with the less formal subjects, for which all or almost all of the State courses provide outlines in certain grades.

15. Subjects with more of content and less of form hold a prominent place in the curriculum, as shown by the relative amount of space allotted to them.

16. Subjects receiving little or no class instruction are allotted less space than others. The amount of space given a subject is also affected by the number of grades or classes for which outlines are provided.

17. Time allotments to various subjects in city systems are not adapted to one-teacher schools. Time allotments in the two schools do not agree except in the relatively large or small amount of time given to certain subjects.

18. To make it possible for all outlines to be utilized in one-teacher schools the following conditions are suggested:

(*a*) Grade or class outlines provided for only those grades or classes in which children in rural schools receive instruction in regular recitation periods.

(*b*) Ungraded outlines provided in subjects in which the school is formed into one class for instruction.

(*c*) The work in other subjects coordinated with related outlines already provided.

(*d*) The material in the various grades for each subject organized in such a way as to permit of alternation or rotation of outlines by years, in harmony with the organization of one-teacher schools.

Chapter V.

SELECTION AND CORRELATION OF CONTENT MATERIALS.

PROBLEM.

This chapter is introductory to and an explanation of later chapters (VI to X). For the understanding of this chapter the reader should refer to the following chapters, where the materials or topics themselves are classified and listed by subjects.

Probably the most important work in making a rural course of study is that of selecting and correlating the subjects and topics to be used in teaching. The present chapter is a quantitative treatment of the content materials contained in State courses. It describes the methods used by the writer in selecting and eliminating topics. By a "topic" is meant any suggestive word or phrase which means subject matter or teaching material. Pronouns, decimal fractions, nutrition, dairying, Monroe doctrine, shore forms, and rote singing are examples of topics. The chapter gives the number of topics contained in State courses of study, distributed by subjects. The extent of correlation recommended is also given. The immediate problem is to determine the quantity and distribution of materials of instruction appearing in the State publications and to discover ways and means of keeping the quantity within the limited possibilities of rural elementary schools of eight grades.

METHOD OF INVESTIGATION.

It was shown in Table 9 that each of the 44 courses under survey does not contain an outline for each of the 17 school subjects. Moreover, some subjects receive mere paragraph discussions in some courses. For the purpose of this survey of topics, it was decided, therefore, to choose for each subject separately the 35 State publications which contained the most complete and detailed outlines. This made possible a selection of the best available courses in most subjects. In four subjects for which no more than 35 courses were available all courses were used. The subjects are manners and morals, physical education, household arts, and music.

The relative prominence of topics appearing in the outlines for a subject was determined in the following manner: In reading through an outline the topics mentioned were listed in alphabetical order, and the grade outlines in which each topic appeared were indicated in the

list. Several of the longest and most detailed outlines were read first for the purpose of securing a fairly complete list. To facilitate tabulation this earlier list was rewritten. After all outlines in a subject were read and all tabulations made, it was possible to know the number of courses recommending a topic in any grade. The topics were then rearranged in the order of their frequency of appearance in the courses, beginning with the topic appearing most frequently. No topic was considered unless it appeared in at least two courses. The range in the number of courses in which topics appeared was found to be from 2 to 35.

This method resulted in the production of long lists of topics in most subjects. It was decided to publish only those topics appearing most frequently. It was found with several trial subjects, that fairly short representative lists would be secured by selecting those topics that appeared in 40 per cent or more of the courses in a subject used. Thus, in the case of most subjects, topics had to appear in at least 14 courses to find a place in the printed lists. In physical education this number was as low as 10. Again, there were very few outlines provided in some grades for some subjects, as shown in Table 9. This condition made a further provision necessary. It was decided to list for publication no topic which did not appear in at least 10 outlines or courses for any given grade. Therefore, every topic listed in the later chapters (VI to X) of this survey appeared in 40 per cent or more of the 35 (or fewer) outlines used in each subject and in at least 10 outlines for some one grade.

This arbitrarily chosen 40 per cent line of demarcation between topics listed and not listed for publication is used, for the purpose of this survey, as a basis for defining selected and eliminated topics. A selected topic is one that appears in a sufficient number of courses to be listed for publication. An eliminated topic is one that appears in too few courses to be included in the survey lists. The method determines the relative prominence of topics in State publications. It passes judgment upon the topics only in so far as they occur frequently in the courses. Considerable importance may be attached to the selected topics.

By eliminating topics from the survey lists which appeared in fewer than 40 per cent of the courses the writer is aware of the possibility of excluding many teaching materials worthy of being selected for use in the schools. There may be some suggestive topics giving promise of much profitable school work which have been included in only a few courses, and perhaps in only one. The survey lists do not, in all probability, include some of the most progressive topics, for the reason that their origin is too recent to appear in more than a few courses. To give the reader an opportunity to observe the character of the topics excluded from the survey lists, it was decided to publish

those appearing in 5 to 13 courses. These are given in connection with the analysis of topics under each school subject (Chs. VI to X). No account has been taken in the survey of topics appearing in fewer than five courses, although some of these topics may also be worthy of a place in every course of study for rural schools.

TYPES OF TOPICS.

There are in general three types of topics included in the survey lists—subject-matter topics, method topics, and topics referring to aims in teaching. By far the most common of these in most subjects are the subject-matter topics, such as, fractions, colonization of America, Cuba, farm crops, and verbs. While the writer's primary interest was centered in these topics, it was not thought wise to exclude other types.

Topics pertaining to methods of work are mentioned prominently in some subjects, such as handwriting. Position of body in writing, air- and dry-pen writing, and movement drills are examples of such topics. It was not always easy to separate them from subject-matter topics. A number of courses are manuals of methods quite as much as outlines of content. There is a tendency in some of the more recently published courses (New Jersey, Minnesota) to make content secondary to method. For these reasons method topics have been left in the survey lists.

Topics which by their nature are aims rather than content topics appear in the lists. Certain habits to be formed or virtues to be acquired, such as neatness and cleanliness, are of this type of topic. Even though such "purpose" topics are embodied in the outlines, as is frequently and wisely done, they deserve as well a more prominent position at the first of the outlines. The untrained and unsupervised rural teacher needs the help derived from a full and clear statement of purposes for each subject and for each grade in each subject for which outlines are provided. For this reason aims in each subject mentioned in the courses have been collected and summarized. (Cf. Reading aims, Ch. VI.) Sometimes two or three related aims are given as one. The aims as stated in the summarized form also occasionally include those where two or three related aims are given as one. Forming habits of writing legibly, rapidly, and easily is an aim of this kind. By this means aims could be stated in more compact form, as well as in a clear, forceful way.

SELECTION OF TOPICS.

The need for a more carefully selected list of teaching materials becomes evident upon the analysis of topics in State courses. The details of criticism are left to later chapters. The general character of topics and the bases and methods for their selection may be given here.

There are topics of every variety and description. Three general types have been noted. Among the topics are those that are permanently useful, such as pronouns and addition. There are also those that do not function very largely in life, such as cube root and parsing. Some are strikingly traditional, such as diagraming and the use of copybooks. Some are modern and progressive, such as farm crops and community civics. Some have been noted as broad in scope, such as commerce and memorization. Others refer to details in application, such as care of teeth and key signature. Some are poorly adapted to rural children, such as police systems and city governments. Some worthy topics are mentioned infrequently, such as automobiles and the study of clothing. Many topics frequently mentioned are also essential to a modern course of study, such as food preparation and the correct use of words.

Rural courses have been criticized for their failure to meet the needs of schools to-day. It is possible that the following quotations are too critical for general application:

> The curriculum of the country school contains little or nothing that distinctly prepares for country life.[1]

> The present elementary course is in effect an antiquated type of school program. It makes no provisions for activities now regarded as essential to a well-rounded elementary education.[2]

> Our schools spend too much time in acquiring the working tools of education because the subject matter is cumbered with all kind of unnecessary timber, and the methods of presentation are inadequate. The schools do not devote enough time to the things which serve a real purpose.[3]

There are important factors in the selection of topics. Some of these factors are the experiences of children, the everyday needs of life, worth of materials to children and to society, changed conditions in rural life, average ability of rural teachers, school facilities, average length of term, and national and community ideals. These factors emphasize the need for omitting some topics now in the rural curriculum and for including others.

This matter of selecting topics for a State course of study should doubtless be intrusted to State department members, rural supervisors, county administrative workers, and live rural teachers, as was pointed out in Chapter I. Some courses have left this work too largely to the teacher, as is indicated in the following quotations. The teacher's task is not so much the selection of topics as that of deciding upon the amount of time and effort individual pupils should put upon a topic. The economic problem of teaching a topic or problem to the extent of its educational usefulness must be finally solved by the classroom teacher.

---

[1] Public Education in Maryland, p. 37. Maryland Educational Survey Commission.
[2] Public Education in Delaware, p. 50. General Education Board.
[3] Foght, The Rural Teacher and His Work, p. 228.

The selection of topics which are most important and best adapted to the purpose for which the course is intended, and the organization of the subject matter around them, are matters for the educational expert.[4]

The selection and organization of topics for study is a task entirely beyond the ability of the untrained teacher. Unless the course of study provides this organization, it usually follows that the teacher falls back on the textbooks. Memorizing facts as given in the book and repeating them directly to the teacher in the recitation becomes the chief purpose of the pupils. The possibilities of the recitation are entirely lost in mere routine; there is no discussion, no opportunity to exercise judgment, and no time for thinking.[5]

RELATIONSHIP OF LISTED TOPICS.

It was explained at the beginning of this chapter that topics in this investigation are taken to mean words or phrases naming teaching materials contained in the outlines of the courses in each subject. The topics in more than 9,000 pages of print were expressed in a very great variety of words and phrases. There are often several ways in which to express the same thought. The same words or phrases in different contexts frequently mean different things. It was not always an easy task to determine the exact meaning of a topic or the best way to express it. Careful interpretation of thought was needed to tabulate a topic correctly, when it was not clearly or specially stated. To combine into one, topics similar in meaning but of different phraseology, and to record accurately the frequency with which each topic occurred in the outlines, were problems constantly requiring diligence and painstaking effort while reading through the courses of study.

Some names occur in the outlines of courses as two or more topics which are largely, if not wholly, synonymous in meaning such as colonization and settlements, lowlands and depressions. Such names are listed as one topic.

Some names are often found treated together, although they are unlike in meaning. These names were written as one topic, unless each was considered of sufficient breadth or scope to entitle it to a separate place in the list. Examples of such topics are "senators, representatives," "exports, imports," and "brain, spinal cord."

Some topics of two or more words name activities and also the results of activities, when the one does not necessarily include the other. Examples of such topics are "laws, lawmaking," "drawing, drawings," and "furs, fur trading."

Some topics are comprehensive and broad in meaning. They include in part or in whole the meaning contained in other topics. The topics "composition" and "continents" are of this type. Thus there are eight topics which include practically all topics listed in language. The problem of this *analytic* survey was not to limit

[4] U. S. Bu. of Educ., Bul. No. 5, 1917, p. 70. Report on an inquiry into the Administration and Support of the Colorado School System.

[5] U. S. Bu. of Educ., Bul. No. 44, 1917, p. 132. Educational Conditions in Arizona.

search to broad inclusive topics only, but rather to find all topics regardless of their scope or their specific and detailed nature, and to list them according to their frequency of occurrence in the courses. It happens, therefore, that "verbs," a somewhat comprehensive topic, include at least 10 other topics in the list, such as "tense of verbs" and "auxiliary verbs," and it is these topics of greater detail that indicate in what ways and to what extent State courses recommend that verbs should be taught.

However similar some topics in a list appear to be, or however much some topics are included in others of wider scope, there are no two topics in the list for any subject which are identical in meaning. It may be observed, for example, that "circular measure" is not all of "denominate numbers," that "highlands" are not the only "land forms," that "thought getting" is not always just "information reading," that the "use of the dictionary" may mean something very different than "defining words," that "sounds, sound combinations" are not identical with "phonic method," and that "climate" is something more than "temperature." That many topics are included in some form in practically all courses is quite evident, but no topic was recorded as appearing in an outline when its presence could not be definitely and surely known. Thus, the topic "verbs" was not scored when the topic "parts of speech" appeared. Words were not considered defined when "use of the dictionary" was mentioned, nor was "dictionary lessons" scored when "defining words" was given. Every effort was made to discriminate carefully between meanings of topics. Thus each topic is listed in the group to which it was assigned by the number of courses in which it appeared, regardless of any possible inference that it might belong to or be included in some other topic.

The exact number of courses in which each topic appeared, and the number of courses in each grade in which each topic appeared, were at first recorded in lengthy tables containing many figures. To place the topics in more convenient form for publication, it was decided to group them into those appearing in 80 per cent or more of the courses, those appearing in 60 to 80 per cent of the courses, and those appearing in 40 to 60 per cent of the courses. In each group the topics remain listed in the order of their frequency of occurrence in the courses. The groups will doubtless reveal sufficiently well for all practical purposes the relative prominence of topics in the courses.

The more limited lists of topics may be taken to represent the higher degree of emphasis the more frequently mentioned topics are given, and possibly should be given, in course-of-study outlines. Because of their greater frequency of appearance, there is greater certainty that these topics should comprise at least a portion of the

topics included in a national curriculum for rural elementary schools. They may also be useful for further investigation and study.

The frequency with which a topic appears does not pass judgment on its merits except as, by virtue of its importance, it has found ready recognition in many courses. There are topics of long standing that are still used by custom rather than by proper evaluation. There are topics recently introduced which have not as yet received nation-wide recognition. This method of selection can not satisfy all conditions. What it does do is to select those topics quite universally accepted as standard. It also gives the rank each topic so selected holds. The addition of important present-day topics, and the amount of attention to be given each topic in instruction in the several grades, are problems which this investigation does not undertake to solve.

NUMBER OF TOPICS.

Table 18 shows that there are 3,504 topics which appear in the subject outlines of two or more courses. With this many topics in the curriculum a pupil attending daily throughout the elementary-school period of nine months each year would have an average of only two hours for the study and mastery of each topic. Among the topics are such as addition, commerce, dairying, word study, nouns, inventions, local government, and health habits. If these and many others are to be mastered with any degree of thoroughness, it appears that a large majority of the 3,500 topics must be eliminated from the lists to be studied at length in school.

TABLE 18.—*Number of topics appearing in at least 2 but not more than 35 State courses of study.*

[Selected topics are contained in the survey lists of Chapters VI to X. Eliminated topics appear in fewer than 40 per cent of the courses used for each subject.]

Subjects.	Number of topics.		Total.	Per cent eliminated.	Per cent of selected topics.
	Selected.	Eliminated.			
Reading [1]	90	101	191	53	6.3
Language [1]	150	163	313	52	10.5
Spelling [1]	31	11	42	26	2.2
Handwriting [1]	46	32	78	41	3.2
Arithmetic [1]	119	132	251	52	8.4
History [1]	171	285	456	62	12.1
Civics [1]	36	47	83	57	2.5
Manners and morals	50	119	169	70	3.5
Geography [1]	146	205	351	58	10.1
Hygiene	113	119	232	51	7.8
Physical education [1]	26	34	60	56	1.8
Nature study	92	117	209	56	6.4
Agriculture	136	181	317	57	9.3
Household arts	85	252	337	75	6.0
Manual arts	33	101	134	75	2.3
Drawing [1]	54	134	188	71	3.7
Music [1]	56	37	93	40	3.9
Total	1,434	2,069	3,504	59	100.0

[1] Considered from the standpoint of minimal essentials by the committee on economy of time and reported in the yearbooks of the Society for the Study of Education. Only 6 of the 17 subjects in this list remain to be considered by the committee.

Fifty-nine per cent of all topics have been eliminated. This leaves 1,434 topics which have been included in the survey lists for 17 subjects. There are 1,440 days in the elementary-school period of nine months each year for eight years. There is, therefore, in the survey lists an average of a topic a day. Some topics are found in the lists of two or more subjects. Eliminating duplications by subjects, there are 1,192 different topics selected. Nonattendance, holidays, and shorter terms in many rural schools may counterbalance with the net number of topics selected, so that there is still an average of a topic a day for many rural children. In consideration of the scope and importance of such topics as subtraction, poultry, the sentence, North America, and public highways, the increase in time for the average topic from two to six hours (or a day) receives some justification. There is nothing in this survey to show, however, that children can master the average topic in a day with the degree of efficiency which the aims of the school may require.

The "content" subjects are richest in materials and receive the highest percentages of eliminations. Language has many topics, which is possibly due to additions from the recent trend toward the practical and useful in language instruction. Spelling and handwriting, so called "form" subjects, are among those having relatively few eliminations. While most subjects have varying amounts of both form and content materials, it is evident that topics more purely formal are not eliminated in as large proportions as are the topics relating to content materials. The doubtful importance of many content topics may cause them to be eliminated more readily than topics of form.

GRADE DISTRIBUTION OF TOPICS.

The number of topics for each grade contained in the survey lists is given in Table 19.

TABLE 19.—*Number of topics contained in the survey lists (Chs. VI to X), distributed by grades and subjects.*[1]

Subjects.	Number of topics.							
	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
Reading	43	22	27	24	20	20	25	27
Language	32	26	31	31	40	50	64	69
Spelling	10	11	13	16	16	18	17	16
Handwriting	19	19	25	25	20	20	14	14
Arithmetic	15	30	31	36	36	40	47	29
History	19	20	18	15	14	24	63	101
Civics							14	35
Geography		8	43	64	48	95	49	25
Hygiene	19	19	27	21	38	54	77	27
Nature study	57	65	36	43	21	10		
Agriculture							116	118
Manual arts	20	20	20	19	19	19	17	17
Drawing	23	22	26	29	21	24	19	17
Music	11	14	14	21	12	9	7	4
Total	268	276	311	344	305	383	529	499
Percent of 1,434 topics	18	19	22	24	21	27	37	35

[1] The ungraded subjects are: Physical education, 26 topics; manners and morals, 50 topics; household arts, 85 topics.

One of the important conditions revealed by this table is the large number of topics assigned to each grade. Every year a pupil is required to take from one-fifth to one-third of all the topics in the curriculum. It is evident that many topics are repeated from year to year. The result is a lengthening of the outlines and an increase in the amount of work to be done. There is a tendency in courses of study to outline more work for rural children than they can do well within a year. As the standard of selection is fairly high, the wealth of materials of instruction contained in courses is much larger than shown in the survey topics. Allowance must be made, of course, for counting all topics occurring in the outlines as of equal value, regardless of the character and amount of treatment given to each or the amount of time or study each requires of children. A topic that appeared in two grade outlines might be treated at length in one and only mentioned in the other. There is doubtless a wide range in the amount of careful study that may reasonably be expected of the topics appearing in the outlines of a subject. The fact remains that the amount of work each year has been increased by repetition of topics. Repetition is admittedly a most important factor in learning, but using the same topic over and over endangers the learner's live interest in the work he is doing. The way out of the difficulty appears to be through more intensive study of fewer topics at less frequent intervals.

Another factor revealed by Table 19 is the unequal distribution of topics by grades. The number of topics increases up the grades. The two upper grades contain twice the number of topics assigned to the first two grades. Household arts, usually found in the upper grades, has 85 topics, to make the work still more crowded. It is possible that, as children's power for study increases and repeated topics become better understood, a larger number of topics can be studied from year to year. But it appears that there should be a more even balance and gradual increase in number of topics than is found in State courses. This could be done by decreasing by 5 per cent the number of the seventh-grade topics and by increasing the number in the fifth grade in the same proportion—the two grades in which the increase in number of topics is most irregular.

The amount of repetition of topics by years is given in Table 20. The table shows the grade range of those topics in the survey lists which appeared in at least 10 outlines for one or more grades.

TABLE 20.—*Number of topics in the survey lists (Chs. VI to X) which appear in 10 or more State courses, distributed according to the number of grades in each subject.*

Subjects.	Number of topics in the survey lists.									Total.
	No grade.	One grade.	Two grades.	Three grades.	Four grades.	Five grades.	Six grades.	Seven grades.	Eight grades.	
Reading	17	17	10	10	10	8	4	1	13	90
Language	27	32	24	20	16	5	9	2	15	150
Spelling	5	3	3	3	3	4	3	2	5	31
Handwriting	21	.....	11	.....	1	.....	5	.....	8	46
Arithmetic	16	19	38	11	6	7	5	4	13	119
History	14	81	35	23	4	7	3	2	2	171
Civics	6	18	12	.....	.....	.....	.....	.....	.....	36
Manners and morals	50	.....	.....	.....	.....	.....	.....	.....	.....	50
Geography	5	23	26	26	33	22	10	1	.....	146
Hygiene	40	23	14	9	8	.....	2	7	10	113
Physical education	26	.....	.....	.....	.....	.....	.....	.....	.....	26
Nature study	24	10	17	10	14	7	10	.....	.....	92
Agriculture	19	19	98	.....	.....	.....	.....	.....	.....	136
Household arts	85	.....	.....	.....	.....	.....	.....	.....	.....	85
Manual arts	5	.....	12	.....	.....	9	.....	.....	7	33
Drawing	15	9	4	6	3	2	1	1	13	54
Music	34	7	4	4	3	4	.....	.....	.....	56
Total	409	261	308	122	101	75	52	20	86	1,434
Per cent of total	29	18	21	9	7	5	4	1	6	100

Explanation.—The table is to be read as follows: Of 90 topics in the survey list in reading, 17 did not appear in 10 courses for any grade, 17 appeared in one grade, 10 in two grades, etc. Of 150 language topics listed, 27 did not appear in 10 courses for any grade, 32 appeared in one grade, etc.

Almost one-fourth (23 per cent) of the listed topics appear in 10 or more outlines for four or more grades, and over one-half (53 per cent) of them appear in as many outlines for two or more grades. At least 10 courses consider 86 topics important enough to place them in every grade. Not counting the topics in ungraded subjects (Table 19), there are 509 topics listed that do not appear in more than one grade. This represents approximately one-third (35 per cent) of all topics. If practice warrants a safe conclusion, one-third of the work of the elementary school should be done in a satisfactory way within the year it is first offered, while the other two-thirds requires repetition in two or more grades.

It is also instructive to know how many new topics are taken up each year. This is shown in Table 21. In the second grade, for example, there are 71 topics which did not appear in the first. The third grade has 124 new topics. The eighth has 180 topics not appearing in any previous grade.

TABLE 21.—*Number of new topics*[1] *in each subject in the survey lists (Chs. VI to X) appearing in each grade.*

Subjects.	Number of topics.								Total.
	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	
Reading	43	3	11	7	4	4	9	9	90
Language	32	6	11	8	15	20	27	31	150
Spelling	10	3	4	4	3	4	2	1	31
Handwriting	19		16		6		5		46
Arithmetic	15	16	12	11	10	18	26	11	119
History	19	2	5	6	3	15	45	76	171
Civics							13	23	36
Manners and morals									[2] 50
Geography		8	36	37	19	42	4		146
Hygiene	19		8	2	17	25	36	6	113
Physical education									[2] 26
Nature study	57	21	5	9					92
Agriculture							116	20	136
Household arts									[2] 85
Manual arts	20			6			7		33
Drawing	23	4	9	11	2	4	1		54
Music	11	8	9	13	4	5	3	3	56
Total	268	71	124	116	83	137	294	180	1,434
Per cent of total	18	5	9	8	6	10	20	13	89
Proposed per cent of total	14	10	10	11	12	13	15	15	100

[1] A topic is considered new in the first grade in which it is listed.

[2] Eleven per cent of the topics are in three ungraded subjects.

Perhaps the most significant fact revealed by these data is the unequal increase of new topics up the grades. The number of new topics for the seventh grade is due largely to the introduction of agriculture in this grade. But why this grade should have twice as many new topics as the sixth and four times as many new topics as the second is difficult to explain. The difficult problem for course-of-study compilers seems to be that of striking a more even balance in the amount of new work each succeeding grade or class may do. The writer's proposed distribution of new work each year (Table 21) includes the ungraded topics. It is assumed in this distribution that the scope and difficulty of topics for each year are fairly equal, and that the amount of new work children are capable of doing each year may be gradually increased.

There is far greater variation in the number of new topics studied each year in any one of several subjects than for all subjects taken together. Geography is dominant in the intermediate grades and history in upper grades. Nature study is limited to lower grades, and agriculture and civics to upper grades. Certain grades are selected in which certain subjects are taught exclusively. The relatively larger number of new language topics in upper grades in all probability is due to the lingering influence of formal grammar and such additions as recent changes in instruction have brought about.

To limit the number of grade outlines in any subject, to provide more intensive work in fewer years in certain subjects, and to allow sufficient repetition to insure efficiency in instruction, are movements altogether favorable to one-teacher schools.

GROUPING OF SUBJECTS AND OF TOPICS.

The problem of grouping subjects arises out of the growth and expansion of the curriculum. In colonial days there were 3 subjects; before the national era, 7; some three decades ago, 11; and to-day there are 17, with others knocking at the door for admittance.[6] It appears more difficult to eliminate a subject than to permit its entrance. Some topics, like thrift, are growing to the proportions of a separate subject, but in all probability it is wiser to continue making thrift a part of courses in arithmetic and civics. Some subjects, like grammar and physiology, have been materially modified by modern practice that they have almost lost their identity as such in a few courses. The accumulation of material without adequate elimination and readjustment increases the need for further modifications, of justified grouping of subjects and topics, and of reselection on basis of modern needs.

For the purpose of this survey the subjects have been grouped according to the following plan:

I. English: Reading, language, spelling, handwriting (Ch. VI).
II. Mathematics: Arithmetic (Ch. VII).
III. Citizenship: History, civics, manners and morals (Ch. VIII).
IV. Elementary science: Geography, hygiene, physical education, nature study (Ch. IX).
V. Industry and art: Agriculture, household arts, manual arts, drawing, music (Ch. X).

This grouping is admittedly open to objection. Other groupings might have done as well. The larger issues of the survey are not disturbed by the grouping as here given.

As nearly as possible, related subjects were placed in the same group. Physical education and hygiene, for example, have a common purpose in promoting health. For this reason they were placed in the same group, even though physical education has doubtful significance as a science subject.

CORRELATION OF SUBJECTS AND TOPICS.

Suggestions for correlation of subjects and topics are given in courses of study, but many times these are meaningless to the average rural teacher. The only directions teachers are often given are such as, correlate geography with history, spelling with reading, or arithmetic with agriculture. All too often the process of correlation is not made clear or explained with the detail necessary for many teachers to comprehend. The lack of proper correlation is brought out forcefully in a number of State surveys, as illustrated by the following quotation:

[6] Cubberley, Public Education in the United States, p. 326.

To cover 20 subjects, each of which is outlined for a full nine-month school year, is practically impossible outside of a well-graded school. Agriculture, nature study, cooking, sewing, manual training, road making, poultry culture, civics, scientific temperance, etc., are all excellent in themselves, but should be correlated with the "three R's," if they are to be taught satisfactorily in a one-teacher school. For example, much of the geography and history, especially in the lower grades * * * could be given as language just as well as geography or history.[7]

There is some agreement in practice as to the most desirable subject for correlation. Barnes states that English is the one study with which every other subject in school correlates.[8] All subjects have probably more points of contact with language than with any other subject. This is indicated in Table 22, which gives the number of courses in which the correlation topics appeared. Language easily ranks first as the best correlating medium. It is the only subject mentioned for correlation with every other subject. In the average course, language is given as a correlating subject twice as frequently as the subject ranking nearest it in this respect.

TABLE 22.—*Number of State courses of study recommending correlation of subjects.*

Subjects with which correlated.	Number of courses in each subject.															
	Reading.	Language.	Spelling.	Handwriting.	Arithmetic.	History.	Civics.	Manners and morals.	Geography.	Hygiene.	Physical education.	Nature study.	Agriculture.	Household arts.	Manual arts.	Drawing.	Music.
Reading	a16	34	9	....	1	18	....	14	5	1	....	6	4	4	8	4	2
Language	12	33	11	14	2	18	2	10	10	9	5	13	13	6	9	5	4
Spelling	....	22	24	....	....	....	....	....	....	....	....	....	3	2	2	....	....
Handwriting	....	11	10	18	1	....	....	....	....	....	....	....	3	....	3	....	1
Arithmetic	7	16	....	....	6	....	....	3	2	....	2	5	13	1	6	2	7
History	....	32	....	....	4	20	8	12	7	....	....	1	6	5	8	7	1
Civics	....	5	....	....	5	8	8	12	1	1	....	....	....	....	....	....	....
Manners and morals	....	8	....	....	....	9	2	21	....	13	....	....	....	....	....	....	....
Geography	....	30	2	....	9	19	8	2	7	....	....	13	11	6	10	17	....
Hygiene	....	15	....	....	....	....	18	2	....	4	....	6	5	8	....	....	....
Physical education	....	9	....	....	....	21	5	15	....	26	7	....	2	....	....	....	5
Nature study	....	33	....	....	3	....	....	2	4	3	....	12	3	9	10	8	....
Agriculture	5	11	....	....	6	20	....	....	4	1	5	4	11	9	3	1	....
Household arts	....	11	....	....	....	....	....	....	....	9	3	....	2	14	11	3	....
Manual arts	....	19	....	....	11	....	....	....	1	....	5	4	2	2	14	7	....
Drawing	5	18	....	....	....	5	....	....	2	3	....	8	9	1	21	20	7
Music	....	7	....	....	1	....	....	....	2	....	....	1	....	....	1	....	9
Average of 35 courses	5.0	13.1	2.9	1.8	3.2	6.5	2.4	3.9	5.1	3.5	3.1	4.2	4.5	3.0	4.5	4.2	1.2
Rank	4	1	14	16	11	2	15	9	3	10	12	7	5	13	6	8	17

a Figures showing correlation of a subject with itself are for the topic "correlated subject." The subjects in particular with which correlated were not named.

Explanation.—The table is to be read thus:

In 12 courses in reading the topic "correlate with language" appeared; in 7 courses in reading the topic "correlate with arithmetic" appeared, etc.

Correlation with subjects other than language is mentioned more infrequently. Arithmetic, reading, history, agriculture, and manual arts are suggested for correlation with almost every other subject.

[7] U. S. Bu. of Educ., Bul. No. 5, 1917, p. 71. The Colorado School System.

[8] Barnes, English in the Country Schools, p. 20.

Agriculture takes fifth place among the subjects recommended for correlation, although Betts and Hall make it the new center of correlation in the rural school curriculum.[9]

Aside from the relative importance attached to subjects as mediums of correlation the most significant feature in Table 22 is probably the simple fact that correlation is a topic that appears repeatedly in the outlines of subjects. The topic appears 71 times in the average State course of study (average of 35 courses used), or more than 4 times in the average State course for each subject.

A topic given in the outlines of one subject for careful study is sometimes given in the outlines of another subject for the same purpose. For correlation purposes this has an appeal, but as assigned topics for study this appears to be an unnecessary duplication in many cases. There are 124 survey topics listed in two subjects and 48 others in more than two. This represents one-seventh (14.4 per cent) of the 1,192 topics listed. The overlapping is much larger than here shown because of the high standard of selection by which a topic was admitted to the survey lists. Allowance must be made for the fact that some topics have wide application, and different phases of them may well be studied in different subjects. Such a topic is clothing, which appears in the history, geography, and hygiene lists.

The problem of adquate correlation can not be left to the average rural teacher. Those who would provide outlines in 10 to 17 subjects without detailed directions as to the parts that may be taught together and in what ways have not adequately conceived the problem in one-teacher schools. Correlation is also needed quite as much for children in village and town schools to protect them from too many classes and topics or problems each day. Both teachers and pupils need guidance in the handling of the vast body of useful knowledge, and for the unsupervised rural schools this can probably be furnished best by an effectively organized and fully correlated course of study.

A PROGRAM OF CORRELATION.

The number of outlines for children of any one grade or class to pursue should be reduced in courses of study to the limitations of the average teacher's program of classes. The organization of content in the course of study should meet the teacher's needs. If the fifth and sixth grade children in one-teacher schools, for example, are to be in one class and pursue the same studies, then it follows that there should be just as many, but no more, class outlines provided for them in the course of study as there are regular class periods for them on their two-year program, alternated by years. Moreover, the two outlines provided for the two-year period for a class, as the

[9] Betts and Hall, Better Rural Schools, p. 64

fifth and sixth grades combined, should be evenly balanced in difficulty, if the course is to be used in schools following the plan of alternation. A course of study so organized would effectively aid the average country teacher, whose general inability to organize from many outlines is well known.

In some courses issued recently (Minnesota, Montana) there is a noticeable tendency to organize courses around coordinating centers and to limit rather than to increase the number of outlines provided. A few courses have included civics with history outlines. Courses in industrial arts, including handwork, manual arts, household arts, and drawing, have appeared. Nature study and agriculture have frequently been combined. The Government bulletins on correlation of agriculture with the public-school subjects are doubtless well known.[10] The question is a matter of choosing the subjects to be regularly taught, for which outlines are to be provided, and of correlating and combining other subjects with them in such a way as to insure appropriate instruction in the schools.

An index to the solution of this problem may be found in the proportional length of outlines State courses give to each subject in each grade. The facts were presented in Table 12, Chapter IV.

In those subjects for each grade in which the per cent of average space for grade outlines is relatively small, grade outlines might be omitted and the work in such subjects correlated or made a part of the outlines of other subjects. On basis of these percentages of space relations, and in harmony with the schedule for class periods given in the Table 7 (Ch. III), the following program for correlated outlines has been arranged (Table 23).

The program here presented is intended primarily for one-teacher schools. It provides for the same number of outlines as there are grades or classes in the several subjects in school. It is in one-teacher schools where help through the course of study is needed most. It should be easy for teachers in consolidated and village schools to adapt such outlines to their own needs. There may be occasionally a rural teacher who does not require all the help here contemplated. It was possible for the "Brown Mouse" to correlate every subject about agriculture and community life successfully without the aid of a course of study.[11] A large factor in Mrs. Harvey's success was, in all probability, her skill in correlating effectively all her teaching about two large related centers of interest.[12] The best results obtain when divisions of work into subjects are largely lost sight of in the correlation of better teaching. But the average rural teacher needs all the

[10] U. S. Dept. of Agric., Bul. Nos. 281 and 132, 1918. Correlating Agriculture with the Public School Subjects.

[11] Quick, The Brown Mouse, p. 159.

[12] Dewey, New Schools for Old, pp. 246, 329.

help in organizing and correlating work a course of study can give. With such help, better teaching may well be expected, even of untrained and largely unsupervised rural teachers.

TABLE 23.—*A proposed program of organization for correlated outlines.*

Outlines provided.		Correlated subjects.
Grades.	Subjects.	
1 to 8	Reading	Spelling, phonics, word study—Grades 1 and 2. Literature—Grades 5 to 6.
1 to 8	Language	History, civics—Grades 1 to 4; hygiene 1 to 5. Picture study, composition, handwriting. Grammar—Grades 7 and 8.
A, B, C	Spelling	Word study. Three outlines for three classes.
1 to 8	Arithmetic	Thrift, seat work, industrial arts.
5 to 8	History	Civics, manners, morals.
4 to 7	Geography	The industries, social and community life.
6 and 7	Hygiene	Physiology, sanitation, physical education.
1 to 4	Nature study	Home geography—Grades 1 to 3. Industrial arts, construction work, home making.
5 to 8	Agriculture	Industrial arts, manual arts, household arts, club work, school lunch.
Outlines for the school as a whole.	Handwriting	Upper-grade children excused when standards are reached and maintained.
	Drawing	Correlated with other subjects, particularly with geography, arithmetic, and agriculture.
	Music	As community singing and with phonograph records. In opening exercises frequently.
	Physical education	As organized play at play periods.

Seat work correlated with each subject as a definite and organized part of each outline.

Manners and morals correlated with all activities in both work and play.

SUMMARY AND RECOMMENDATIONS.

1. The State courses in each of 17 subjects were analyzed in detail for their aims, methods, topics, and related content materials. Not more than 35 courses for any one subject were used, which made it possible to select the best courses available.

2. Of 3,504 topics appearing in State courses in the outlines for all subjects, 1,192 were found to occur in 40 per cent or more of the 35 selected courses or fewer courses in any one subject. These topics appear in the survey lists of each subject (Chs. VI to X). For the purpose of this survey a "selected" topic is one contained in the list of topics appearing in 40 per cent or more of the courses and an "eliminated" topic is one that appears less frequently. A topic was not admitted to the list, however, unless it appeared in at least 10 courses. Supplementing the survey lists are suggestive topics appearing in fewer than 40 per cent of the courses.

3. An examination of the survey lists reveals the great variety of topics and the abundance of teaching materials. Topics pertaining to aims, methods, and subject matter are included. There is clearly a need for the discontinuance of topics that do not answer to the needs of farm children and for the reselection and proper evaluation of materials in the light of social and economic progress.

4. Eighty-five per cent of the listed topics appear in the list of one subject only; 10 per cent in the lists of two subjects; and 5 per cent in the lists of more than two subjects. It seems desirable that all topics should have a "subject home" and be assigned to only one subject for intensive study.

5. About one-third (35 per cent) of the school work is completed in the year it is first offered, while two-thirds is repeated in two or more years (Tables 19 and 20). Each year pupils are assigned from one-fifth to one-third of all the topics in the curriculum. A crowded curriculum presents the need for a reduction of this large amount of repetition of topics by grades. Allowing 8 years of 9 months each, it would require 7.2 hours of school time for the study of each of the 1,192 topics listed.

6. No grade is worked harder than the seventh, if it may be assumed that topics on the whole are fairly equal in scope and in difficulty. This is, however, not a safe assumption, since a few topics, such as thrift, have almost come to be subjects in themselves. By decreasing the number of topics in the seventh grade by 5 per cent, and by increasing the number of fifth-grade topics in the same proportion, the yearly increase in the number of topics up the grades would be nearly the same (Table 19).

7. A few coordinating centers, rather than several, are needed for the effective operation of the plan of alternation and combination. The tendency is to reduce the number. For the purpose of this survey, five have been chosen—English, arithmetic, citizenship, elementary science, industry and art.

8. Correlation of subjects and correlation of topics within subjects are effective means of organizing content materials for economy of time. English, particularly language, is the best correlating medium.

9. To assist the rural teacher in properly correlating her work, the same number of outlines in the course of study should be provided as the number of grades or classes in the several subjects in school.

10. The following principles for guidance are suggested:

(*a*) Subjects that may be easily and effectively coordinated with other subjects not to appear on the program for regular class instruction.

(*b*) The leading aims in each subject and in each grade in each subject set out from the main body of the outlines as important considerations.

(*c*) Scientific investigations and psychological studies utilized in the selection of the best methods of instruction recommended in the course of study.

(*d*) The number of topics repeated for intensive study in various grades reduced to a minimum.

(*e*) Each topic assigned for intensive study to that subject with which it is most closely related, and to that subject only.

(*f*) Topics selected of greatest value to children on farms and in rural-minded villages and towns. Social and economic needs not underestimated in this selection.

(*g*) Teaching materials distributed to the several grades according to the level of ability of children using them and in such a way as to preserve an even balance of work from year to year. Aim of this distribution also to make the plan of alternation and combination of grades and of subjects easily possible in one-teacher schools.

(*h*) Topics effectively correlated about centers of interest to children. Success in school work secured in part through the correlation of better teaching.

Chapter VI.

ANALYTIC SURVEY OF ENGLISH COURSES.

The survey includes reading, language, spelling, and handwriting in the English group. These are "tools" which children need to know how to use in connection with all subjects they study.

English is allotted 26.9 per cent of the space assigned to all subjects (Table 10) and 52.1 per cent of total recitation time on 26 programs (Table 6).

Of all the space in State courses allotted to English, more than one-fourth (27.9 per cent) is assigned to ungraded outlines or general suggestions. Distribution of space assignment to graded outlines is fairly even for each subject of the group, except reading (Table 13).

There are 317 English topics in the survey lists, which number represents 22 per cent of all listed topics. Language has many topics due to the influence of grammar in upper grades. Handwriting and spelling contain relatively few topics.

A very large number of the English topics listed pertain to methods of teaching, except on the formal side of language. The value of psychology as applied to the teaching of English subjects is given some attention.

It appears that more attention should be given to improvement through the habit of watching for errors in reading, talking, spelling, and writing. These matters are given fair consideration in only a few courses.

READING.

In 13 courses reading is regarded as the most important "tool" subject. More recitation time is allotted to it than to any other subject. One-fourth of the total number of pages devoted to reading is given to the first grade, where it is undoubtedly most needed.

Reading aims appearing in State courses are commendable for their emphasis on reading for information and for appreciation. Specific aims resulting from scientific investigations are only recently finding their way into the courses. The aims most frequently mentioned are:

Intelligent interpretation of the printed page with reasonable accuracy and rapidity.

Ability to read (for others) in pleasing, natural, forceful, expressive ways.

Appreciation of and love for good literature.

Clean, healthy, profitable, enjoyable employment.
Creation of a compelling desire to read the best well.
Develop the power to picture vividly.
For ethical culture and moral development.
Develop the power of discriminative reading.

Ninety reading topics appear in more than 40 per cent of the 35 courses examined. Of these, 75 per cent are method topics. Topics appearing in fewer than 14 courses are very similar in type to topics appearing in more courses.

TOPICS IN ELEMENTARY SCHOOL READING.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN MORE THAN 80 PER CENT OF THE COURSES.

*Stories, story telling.
*Phonics, phonograms.
Supplementary reading.
*Pronunciation.
*Sounds, sound combinations.
Blackboard lessons.
Silent reading.
Drill lessons.
Sight reading.
Natural expression.
Thought getting.
*Beautiful passages.
Memorization.
Use of dictionary.
Clear enunciation.
*Classics, literature.
*Mechanics of reading.
Correct articulation.
*Poetry, poems.
Use of library books.
Oral reading.
Dramatization.
*Picture study.
Emphasis, inflection.
Voice training.
Talking lessons, conversations.
Word method.
*Action words.
Sentence method.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

*Biographies of authors.
*Word study, mastery.
New, difficult words.
Defining words, definitions.
Word building.
Thought giving.
*History stories.
*Masterpieces, extracts of.
Word analysis.
*Prose selection.
Basal readers.
Development of imagination.
Sentence building.
Diacritical markings.
Agreeable tones.
Intensive reading (thoroughness).
*Memory gems.
Families of words.
Plays and games.
Eye training, forms.
*Newspapers, magazines.
Word groups, phrasing.
Extensive reading (sweep).
Rhythm, smoothness.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Sentence pictures.
Spelling exercises.
Illustrated lessons.
Sight words.
Ear training (sounds).
Review lessons.
Phonic method.
*Names of letters (alphabet).
*Nature study stories.
Reading to class audience.
*Geographical stories.
Related sentences.
Information reading.
Home reading.
Dramatic reading.
*Setting, plot, scene.
Rhetorical pauses.
Key words.
Self-helpfulness.
Book reports.
Rapidity in reading.
Meaning of context.
Correlated subjects.
Descriptive literature.
Reproducing stories.
*Mother Goose rhymes.
Combination method.
Use of imitation.
*National songs.
How to study.
Development of judgment.
*Character study.
Copying exercises.
Drawing, drawings.
Correct posture, position.
Reading habits.
Pitch of voice (control).

*Topics marked with a star (*) pertain largely to subject matter.

The following suggestive topics appear in fewer than 40 per cent of the courses:

Subject-matter topics.—American classics, ballads, dialogues, dramas, essays, fairy tales, folk lore, narrative literature, myths and legends, poetry, lyrics, plot study, rhymes, national songs, travel sketches.

Form.—Abbreviations, accent, how to use indexes, synonyms, word pictures, word recognition.

Allusions, expressive terms, outlining, thought grouping, thought analysis, reading by paragraphs.

Formal methods of learning to read are mentioned more frequently than natural methods. The great variety of methods mentioned makes evident the need for improved standards in teaching reading.

Only slightly more attention is given to silent than to oral reading. Silent reading is, however, much more important in the four upper grades at least. Standards in rate of silent reading and in amount of comprehension are nowhere in evidence, except in a few courses published recently.

Reading is inseparably related to other subjects. Thirty-four reading topics are found in the lists of other subjects. This lends indorsement to a recent conception that reading is for breadth and fullness of experience.

LANGUAGE.

As a correlating median, language easily ranks first. It takes second rank among 17 school subjects in the amount of space devoted to its outlines (Table 10).

Grade outlines are of fairly equal length. Training in the correct use of language is quite as important for one grade as for another.

State courses would have American children study language for the purpose of using it fluently, correctly, intelligently, and forcefully in speaking and writing, and with simplicity, expression, and enjoyment. They would have children—

Use the English language *correctly*.
Speak and write English *fluently*.
Express known ideas in *simple* English.
Use *clear*, *forceful*, *expressive* language.
Use the English language *intelligently*.
Judge *values* and grasp main points.
Organize and *outline* subject matter.
Appreciate and love the beautiful in literature.

Practically all listed language topics represent some phrase of composition, grammar, letter writing, picture study, correction of errors, story telling, poetry, or memorization. Some language topics, such as the last three just named, are also prominent in reading. Proper correlation with a minimum number of topics which are listed for intensive study in two or more subjects makes for economy of time.

TOPICS IN ELEMENTARY SCHOOL LANGUAGE.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN MORE THAN 80 PER CENT OF THE COURSES.

Stories, story telling.
Poems, poetry.
Compositions.
Memorization.
†Correction of errors.
Letter writing.
†Grammar.
†Punctuation.
‡Correlated reading.
Paragraphing.
†Nouns.
†Sentence analysis.
‡Correlated nature study.
‡Talking lessons.
‡Correlated subjects.
Picture study.
†Capitalization.
‡Correlated history.
Topical outlines.
†Verbs.
†Adjectives.
†Pronouns.
‡Correlated literature.
‡Copying exercises.
Descriptions, description.
‡Using words in sentences.
Social letters.
†Sentence, the.
†Parts of speech.
Reproductions.
*Quotation marks.
‡Correlated geography.
†Phrases.
Word study, mastery.
‡Dictation exercises.
†Subject, predicate.
†Adverbs.
*Sentences, as to use.
‡Natural expression.
Sentence building.
†Prepositions.
†Modifiers.
†Correct usage.
‡Language games.
†Clauses.
†Conjunctions.
†Comparsion.
†Sentence structure.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

†Periods, use of.
Enlarging vocabulary.
Narration.
†Transitive verbs.
Dramatization.
*Abbreviations, contractions.
†Personal pronouns.
Definitions.
†Linking, copulative verbs.
†Voice.
*Mode.
†Number.
Correct forms.
Business letters.
*Sentences as to form.
†Relative pronouns.
†Rules of syntax.
†Direct object, indirect.
‡Self criticism.
†Tense of verbs.
*Infinitives.
*Irregular verbs.
†Possessive, apostrophe.
Current events.
‡Correlated industrial work.
Personal experiences.
Biographical stories.
†Participles.
*Conjugation.
†Parsing.
†Case.
*Interjections.
*Predicate noun or adjective.
‡*Correlated spelling.
†Comma, use of.
Clearness, emphasis.
†Intransitive verbs.
†Gender.
†Correct use of pronouns.
Farm life stories.
*Interrogation point.
‡Listing words.
†Plural formation.
†Mechanics of the language.
‡Class criticisms.
‡Review lessons.
*Gerund.
Character study.
*Appositive modifier.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Tables.
Exposition, essay.
Synonyms.
†Number form.
Humorous stories.
‡Seasonal topics.
Christmas.
Birds, bird life.
‡Correlated manual arts.
‡Corrective exercises.
‡Choosing words well.
*Descriptive adjectives.
†Modifying clauses.
*Verb phrases.
†Inflection, modifications.
Animal tales.
‡Observation lessons.
‡Correlated drawings.

* Topics marked with a star (*) pertain to the mechanics of the language.

† Topics marked with a dagger (†) pertain to the mechanics of the language and are contained in Doctor Charter's curriculum based on Grammatical Errors; in Sixteenth Yearbook of the National Society for the Study of Education, Part I, pp. 104–110.

‡ Topics marked with a double dagger (‡) pertain to methods of teaching.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES—continued.

‡Blackboard lessons.
Prose selections.
†Interrogative pronouns.
‡Orderly arrangement.
†Auxiliary verbs.
Argumentation.
*Connectives.
†Principal parts of verbs.
†Classes of nouns.
Complete sentences.
*Limiting adjectives.
*Regular verbs.
Thanksgiving Day.
Myths, legends.
Use of dictionary.
‡Accuracy.
‡Neatness.
Sentence complements.
‡Correlated arithmetic.
*Person.
‡Reading to class audience.
Invitations, replies.
‡Correlated hygiene.
*Diagraming.
†Verbs, person and number.
†Agreement, verb with subject.
‡Object lesson.
Occupations, industries.
Washington's Birthday.
Pronunciation.
Imaginary stories.
‡Expanding stories.
†Correct use of adjectives.
*Possessive pronouns.
†Possessive modifiers.

The following suggestive topics appear in fewer than 40 per cent of the courses:

Acceptances, regrets; correct use of adverbs and of prepositions; emphasis, force; how to study; home and school life; legends; use of library books; judging values; listening and action lessons; maxims and proverbs; memory gems; newspapers and magazines; quotations; rhymes; songs; telegrams and messages.

Stories—Geographical, history, holiday, other land, soil and seed, tree and forest, weather, Indian.

One-half (75) of the topics pertain to the mechanics of language, 54 of which are included in Doctor Charter's curriculum on grammatical errors. Within the field there are many conflicting views as to what should be eliminated from teaching and how that which remains should be taught. There appears to be a need for more extensive elimination of grammar materials from courses of study. Progressive courses indicate that the functional side of grammar should be stressed. Language forms should be carefully selected and become an important part of the course of study.

One-fifth of the topics refer to methods of instruction. This indicates the measure of attention that courses would give to the way children are taught, the things they do, and the habits they form.

Quite a large number of topics appear in several grades. This may be, in a measure, excusable from the standpoint of methods. There are literature topics, such as poetry and shorter selections for story telling, that are even more common in language than in reading outlines. There seems to be little need of duplicating such topics by subjects, unless the phases of work for each subject are clearly differentiated.

Among the topics appearing in fewer than 14 courses are a number closely related to other subjects, such as gardening and songs, but the topics pertaining to the mechanics of the language predominate.

* Topics marked with a star (*) pertain to the mechanics of the language.

† Topics marked with a dagger (†) pertain to the mechanics of the language and are contained in Doctor Charter's curriculum based on Grammatical Errors; in Sixteenth Yearbook of the National Society for the Study of Education, Part I, pp. 104–110.

‡ Topics marked with a double dagger (‡) pertain to methods of teaching.

Practice would not introduce pupils to the use of language textbooks before the fourth grade. Supervision of textbook instruction through language courses of study has had little attention.

Usually the study of reproductions of great paintings is included with language, but picture study is an important topic in several other subjects. Nearly 400 titles of art pictures are given in courses.

TITLES OF 29 REPRODUCTIONS OF FAMOUS PAINTINGS APPEARING IN 10 OR MORE OF 44 STATE COURSES OF STUDY.

Arranged in Order of Their Frequency of Appearance in the Courses.

FIRST AND SECOND YEARS.	THIRD AND FOURTH YEARS.
Millet .....Feeding Her Birds.	Millet .....Shepherdess Knitting.
Raphael....Sistine Madonna.	Boughton...Pilgrims Going to Church.
Bouveret...At the Watering Trough.	Troyon .....Return to the Farm.
Raphael....Madonna of the Chair.	Millet .....The Sower.
Landseer...Members of the Humane Society.	Landseer ...Shoeing the Bay Mare.
Millet .....The First Steps.	Millet .....The Angelus.
Van Dyke..Baby Stuart.	Bonheur....Oxen Plowing.
Correggio...Holy Night.	Hoffmann ..Christ and the Doctors.
Landseer ...Saved.	Boughton...Pilgrim Exiles.
Le Rolle....The Arrival of the Shepherds.	Le Rolle....The Shepherdess.
Holmes.....Can't You Talk?	Reynolds...Age of Innocence.
	Renouf.....The Helping Hand.

FIFTH AND SIXTH YEARS.	SEVENTH AND EIGHTH YEARS.
Millet .....The Gleaners.	Reni .....The Aurora.
Bonheur....The Horse Fair.	Corot.....Dance of the Nymphs.
Watts .....Sir Galahad.	
Breton .....Song of the Lark.	

SPELLING.

The average spelling course in 44 State courses of study contains 4.5 pages. Twenty-nine per cent of the space given to spelling is devoted to suggestions of a general nature (Table 13). The upper grades have the shortest grade outlines.

The following aims for teaching spelling, appearing most frequently in the courses, emphasize spelling efficiency:

Giving pupils the ability to spell correctly the words used in their own writing vocabulary.

Causing pupils to form the habit of pronouncing correctly the words in their own reading and speaking vocabulary.

Giving pupils the ability to use words in meaningful sentences and to use the dictionary intelligently.

Giving the pupils the power to master the spelling and pronunciation of new words easily when needed.

Little attention has been given to establishing habits of watching the spelling used in all written work.

Many courses fail to give definite and helpful suggestions on the best methods of teaching spelling. The value of psychology in teaching has been given slight attention. How to master new words, what words to study, number of words to a lesson, how to use the book, use of rules in spelling, and time to spend on study are matters of importance for careful consideration in courses of study. Courses weak in methods may be partly responsible for poor teaching observed in many schools, as indicated by survey reports.

There are fewer topics in spelling than in other subjects. Most of the topics appear in a majority of the courses and in one-half or more of the grades.

TOPICS IN ELEMENTARY SCHOOL SPELLING.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN MORE THAN 80 PER CENT OF THE COURSES.

Written spelling.	Misspelled words.
Words from all lessons.	Phonograms, phonic elements.
Oral spelling.	Words from spelling books.
Drills, reviews.	Use of dictionary.
Pronunciation.	Articulation, enunciation.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Word analysis.	Dictation exercises.
New, difficult words.	Diacritical markings.
Words in common use.	Derivation of words.
Definitions, defining words.	Rules of spelling.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Prefixes, suffixes.	Word building, synthesis.
Synonyms.	Short sentences, phrases.
Homonyms.	Antonyms, opposites.
Root words.	Spelling match.
Topical lists of words.	Use of eye, ear, voice, muscle.
Copying exercises.	Abbreviations, contractions.
Correct forms.	

The following suggestive topics appear in fewer than 40 per cent of the courses:

Word study, use of words in sentences, orthographic difficulties, word families, history of English language, words mispronounced, memory verses, punctuation and capitalization, sentence building, technical terms.

Many courses suggest the selection of some words outside of the textbooks. But lists of words scientifically determined, such as the Ayres' scale or Jones' lists, are referred to infrequently. The average rural course needs to give more specific and repeated directions on the proper evaluation of spelling words.

HANDWRITING

There are only 4.7 pages in the average handwriting course. Of the 44 State courses, 12 provide no graded outlines. Nearly one-half (47 per cent) of the space allotted to handwriting is assigned to general suggestions (Table 13). The courses containing outlines give the major portion of grade space to the outlines for lower grades. For one-teacher schools graded outlines are not very helpful. Graded standards of achievement, and suggestions regarding the best methods by which they may be obtained, have both meaning and value.

Courses of study would have children taught to write legible, uniform, and beautiful handwriting, with pleasure, ease, and rapidity. This is evident from the following frequently mentioned aims:

Habits of writing legibly, rapidly, and easily formed.
Habits of writing with neatness and simplicity formed.
Habits of correct writing formed.
Acquire ability to control handwriting movements.
Appreciation of grace and beauty in handwriting.

Practically all of the handwriting topics deal with problems of method. Many suggestions for their solution are given. There are only a few listed topics that have not received attention in scientific investigations. More careful attention should be given to psychology of the learning process and standards in handwriting practice now available.

Progressive topics, such as handwriting tests, descriptive counts, endurance tests, and self-criticism are making their appearance in courses.

TOPICS IN ELEMENTARY SCHOOL HANDWRITING.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN MORE THAN 80 PER CENT OF THE COURSES.

*Position of body.	*Movement drills.
*Muscular (forearm movement).	*Ease in execution.
*Position of hand and fingers.	*Letter formation.
Mastery of movements.	*Practice writing.
*Position of arms.	*Correct forms.
*Speed in writing.	Comparing specimen pages.
*Legibility.	Blackboard writing.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

*Drill exercises.	Supervised writing.
Push and pull ovals.	*Position of paper.
*Sentence writing.	*Counting in writing.
*Word writing.	Copy books after practice.
Use of copy books.	

* Topics or problems marked with a star (*) are treated in "Principles on method" by Doctor Freeman in the Eighteenth Yearbook, Part II, pp. 11-23.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Neatness in writing.
Copying exercises.
Writing habits.
*Uniformity in slant.
*Uniformity in speed.
Correlated subjects.
Social correspondence.
Individual instruction.
Whole arm movement.
Business correspondence.
*Accuracy, exact form.
*Uniformity in spacing.
*Group letter drills.
Writing figures.
*Style of slant.
*Uniformity of form.
*Uniformity in letter height.
Air and dry pen writing.
Dictation exercises..
Mental pictures of forms.
Use and care of materials.
Writing compositions.
*Uniformity in alignment.

The following suggestive topics appear in fewer than 40 per cent of the courses:

Orderly arrangement, blackboard copies, crayon holding, developing exercises, drill words, descriptive counts, handwriting tests, reduction of letter size, self-criticisms, endurance tests, tracing copy.

Movements.—Finger, combined, lateral, reverse rotary.

Writing exhibits, principles of writing, stanza writing, straight line writing.

There are numerous minor problems that have not received adequate solution in many handwriting courses. Some of these are: The length of the practice period, use of the copy books and of pen and ink, and handwriting materials needed. In these matters the average rural teacher needs careful guidance.

RECOMMENDATIONS.

The following principles for the improvement of courses in English subjects for rural schools are suggested:

(*a*) The leading aims in each subject and in each grade specified.
(*b*) The best methods of teaching each subject emphasized.
(*c*) Silent reading emphasized, particularly in upper grades.
(*d*) Selection of that content which represents the best in literature.
(*e*) Vitalization of all work in English with functional material.
(*f*) Reasonable standards of achievement set forth.
(*g*) Organization of material with a maximum economy of time.
(*h*) Outlines provided in reading and in language for each grade from one to eight.
(*i*) Outlines provided for three classes in spelling, organized without regard to grade lines.
(*j*) A general ungraded outline in handwriting provided, but so graduated as to indicate very definitely the stages of progress.
(*k*) Motivation of all specifications with definite suggestions.
(*l*) Helping teachers in the selection of words most frequently used in writing and in the most economical methods of learning them.
(*m*) Encouraging the testing of words in spelling before teaching them.
(*n*) Encouraging the intelligent use of the outlines provided.

* Topics or problems marked with a (*) are treated in "Principles on method" by Doctor Freeman in the Eighteenth Yearbook, Part II, pp. 11-23.

Chapter VII.

ANALYTIC SURVEY OF ARITHMETIC COURSES.

Of all subjects, arithmetic holds the most prominent place in courses of study. The average length of outlines exceeds that of every other subject. More recitation time on model programs is given to arithmetic than to any other subject, save reading. Arithmetic is a favorable subject for reducing both the amount of time and the amount of space given to it (Tables 6 and 10).

The grade distribution of space allotment to the eight grades is fairly even, the outlines for grades two and three being only slightly longer than the outlines for other grades (Table 13).

The following aims for teaching arithmetic appear most frequently in the courses. The functional value of the aims is large. In many courses they are not set out prominently from the outlines as objects of great importance. These leading aims might well be made a vital part of the course of study:

Ability to solve the everyday problems of life.
Acquired habits of accuracy in computation.
Established habits of clear number thinking.
Acquired facility (speed) in computation.
Mastery of the fundamental operations.
Ability to apply knowledge in a variety of ways.

The most valuable points on methods of teaching mentioned in State courses are, perhaps, those regarding steps in solving problems. The following represents the general plan in several courses:

Given	What do I know?
Required	What am I to find?
Plan	How am I to solve the problems?
Estimation	What is a reasonable result?
Solution	The process of solving the problem.
Checking	Is my answer correct?

Eighteen courses suggest first use of the textbook in the third grade. There is a lack of attention to the intelligent and effective use of textbooks and to the utilization of problems other than those in the text. The average rural teacher is likely to make a slavish use of the text without the constant intelligent guidance which courses of study ought to provide.

Fifty-three per cent of the topics listed have to do with the mechanics of arithmetic, while 23 per cent of them have to do with practical problems in application. Among the topics appearing in fewer than 14 courses this proportion is reversed. The fundamental processes are emphasized in lower grades. In upper grades there is more concrete problem solving.

TOPICS IN ELEMENTARY SCHOOL ARITHMETIC.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN MORE THAN 80 PER CENT OF THE COURSES.

*†Addition.
*†Subtraction.
*†Multiplication.
*†Division.
*†Simple fractions.
Review lessons.
Rapidity, speed.
†Counting.
Drill lessons.
Accuracy.
‡Practical problems.
*†Decimals.
*†Percentage, per cent.
‡Measuring, measurements.
†Surface measure.
*‡Bills and accounts.
Object lessons.
‡Concrete problems.
†Dry measure.
†Linear measure.
*†Simple interest.
*‡Taxes, levies.
†Roman numerals.
*†Denominate numbers.
†Fundamental operations.
*‡Insurance.
*†Business forms.
†Addition tables.
*†United States money.
†Liquid measure.
†Reduction of fractions.
†Analysis of problems.
*‡Profit, loss.
Commercial discount.
†Promissory notes.
*†Multiplication tables.
†Avoirdupois weight.
†Fractional parts.
‡Business practice.
†Arithmetic signs.
Oral problems.
Definitions, defining terms.
†Long division.
†Time measure.
*Commission.
†Time telling.
†Drawing to scale.
‡Carpet problems.
*†Mensuration.
†Square root.
†Abstract problems.
†Carrying, borrowing.
†Cubic measure.
*†Ratio, proportion.
†Factors, factoring.
‡Applications.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

†Short division.
*†Notation, numeration.
†Reduction of decimals.
†Cancellation.
†Aliquot parts.
Illustrative problems.
†Fractional equivalents.
Plays, games.
*†Least common multiple.
†Decimal equivalents.
‡Farm, farm crop problems.
Rules and principles.
†Receipts.
‡Painting, plastering.
*‡Banking practice.
‡Papering, calcimining.
†Capacity, volume.
†Mixed numbers.
†Board (lumber) measure.
†Drafts.
*Stocks, bonds.
Grouping numbers.
†Subtraction tables.
†Checking solutions.
†Reduction of denominate numbers.
Orderly arrangements.
†Pointing off.
*Partial payments.
‡Applied arithmetic.
‡Buying, selling problems.

*Topics marked with a star (*) are listed in Wilson's study of 39 courses, "Motivation of School Work," p. 180.

†Topics marked with a dagger (†) bear on the mechanics of arithmetic: Forms, facts, tables, fundamental processes.

‡Topics marked with a double dagger (‡) refer to the practical applications of arithmetic.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

‡Savings accounts.
†Circular measure.
*†Longitude, time.
‡Labor problems.
†Metric system.
Paper cutting, folding.
‡Store problems.
One-step problems.
‡Original problems.
Neatness.
‡Home, garden problems.
*†Number relations.
‡Industrial problems.
Estimating sizes.
‡Feeding rations.
Bank discount.
Compound interest.
†Money orders.
†Division tables.
Time tests.
Forecasting results.
‡Graphs, graphic problems.
Short cuts.
*Duties, customs.
Land problems.
Improper fractions.
‡Flooring, roofing.
‡Stock companies.
Two-step problems.
Reasoning problems.
†Algebra, equations.
‡Masonry, brickwork.
*†Powers, roots.

The following suggestive topics appear in fewer than 40 per cent of the courses:

*Mechanics of arithmetic; abbreviations: lines; angles; prime numbers; greatest common divisor.

†Practical applications; Agricultural clubs; board measure; bookkeeping; borrowing, loaning; budgets, inventories; concrete construction; construction work; cooking, menus; cooperative associations; corporations; cost of living; house plans; farm management, household accounts; household economics; household supplies; investments; invoices; land surveys; market reports; mortgages; negotiable papers; parcel post; rents; silo, silage; savings banks; temperature telling; yields, prices.

Types of problems: Building, carpentry, cattle and dairy, clothing, cordwood, corn and crib, factory, fencing, food, fruit, gardening, hay, labor, live stock, machinery, marketing, mining, potato, poultry, pricing, sewing, sheep, swine, testing, thrift, weighing, wheat.

Types of practical farm problems on selected topics are seldom included in arithmetic courses. Probably nowhere does the arithmetic course need building up more than in the outlines on types of farm problems, fully representative of life situations in the State or sections where the course is to be used.

The tendency to eliminate obsolete and functionless material from rural courses in arithmetic has only fairly begun. This is made evident from the following summary: The first column of figures indicates the per cent of 35 State courses in arithmetic that would discontinue the use of the topics; the second gives the per cent of 867 city and county superintendents that would discontinue their use (Fourteenth Yearbook, Part 1).

* Topics marked with a star (*) are listed in Wilson's study of 80 courses, "Motivation of School Work," p. 180.

† Topics marked with a dagger (†) bear on the mechanics of arithmetic: Forms, facts, tables, fundamental processes.

‡ Topics marked with a double dagger (‡) refer to the practical applications of arithmetic.

Per cent of State courses and of city and county superintendents who would discontinue use of certain subjects.

Subjects discontinued.	State courses.	City and county superintendents.	Subjects discontinued.	State courses.	City and county superintendents.
*Apothecaries weight	34	53	*Compound interest	17	.....
*Cube root	30	46	*Compound proportion	17	52
*Table of folding paper	30	35	Commercial discount	14	.....
*Partnership	26	25	*Stocks and bonds	14	.....
*True discount	26	47	*Complex fractions	14	26
*Foreign money	23	.....	*Foreign exchange	14	20
*Longitude, time	20	8	*Alligation	14	85
*Troy weight	20	42	*Equation of payments	14	.....
*Greatest common divisor	20	35	*Metric system	11	20
*Annual interest	20	41	Aliquot parts	8	21
*Surveyor's measure	20	47	*Bank discount	8	.....
Mensuration	17	.....	*Brokerage	8	.....
*Least common multiple	17	22	Square root	3	.....
*Partial payments	17	.....	*Duties, customs	3	.....

* Discontinuance of the use of starred topics recommended by a committee of teachers. Wilson, "Motivation of School Work," p. 101.

RECOMMENDATIONS

The chief points for improvement in arithmetic courses for rural schools are as follows:

(*a*) Shorter outlines provided.

(*b*) The amount of time on daily programs reduced to a minimum.

(*c*) The amount of drill in the fundamentals minimized to the point of maximum efficiency.

(*d*) The curriculum pruned thoroughly of its nonfunctioning material.

(*e*) The functional and useful arithmetical material selected and adapted for use in rural schools.

(*f*) Type farm problems selected to serve as guides to teachers for local adaptation.

Chapter VIII.

ANALYTIC SURVEY OF COURSES IN CITIZENSHIP.

For the purpose of this survey instruction in citizenship includes history, civics, and manners and morals. Training in these subjects is very important in any democratic school system.

The average course in citizenship contains 27.9 pages, which is 14.6 per cent of the space allotted to all subjects. Most of the space in history and civics is assigned to the four upper grades; and in manners and morals, to general suggestions (Tables 12 and 13).

A vitalized course of study in citizenship may be thought of as one made up of activities and of present-day conditions which history is used to explain. By modern points of view history becomes a curriculum of subject matter that explains the present and teaches lessons in the conduct of life, while civics and manners and morals are curricula of activities rather than of subject matter.

The most frequently mentioned aims are not in line with these modern points of view. Knowledge aims or fact history and civics are dominant, rather than training for intelligent citizenship, training in attitudes that find expression in worthy service, and the formation of habits of right conduct and healthful living.

HISTORY.

History ranks fifth among the school subjects in the average amount of space (18.8 pages) 44 State courses have allotted to its outlines. This represents one-tenth of the space allotted to 17 subjects (Table 14).

Grade distribution of the length of outlines indicates that regular class instruction in history belongs to grades 5 to 8. In primary grades history stories are frequently made a part of language outlines (Table 13).

The following aims for teaching history appear most frequently:

Awaken interest in past events.
Gain useful historical knowledge.
Create a love for historical readings.
Develop the imagination.
Form worthy ideals.
Prepare for intelligent citizenship.
Develop a strong moral character.
Develop an historic sense.

It is of interest to note the contrast between the aims appearing most frequently in State courses and those given in the Montana Rural Course.

The purpose of teaching history to children is to prepare them for intelligent citizenship in our democracy.

By training them to think of the larger events and more pressing issues of the day in the light of their historic past.

By giving them a true knowledge of the vital facts of our national life.

By explaining how the world's liberty-loving people have advanced to their present freedom.

By making them eager to contribute their part to the great world movements.

There are two types of outlines. One is based on the textbook, with many page references. The other is an outline of the subject to be taught without regard to the textbook in use, except as a matter of occasional references to places where information on certain matters may be found. The former type still prevails. The problem idea for the organization of history and civics into one outline is coming into use, and it gives promise of far better results.

Twenty States provide outlines in the story history of Europe preceding the study of United States history in upper grades. Our country's story in the fifth grade with that of Europe in the sixth, is growing in favor. The dividing date between the outlines for seventh and eighth grades is 1830 in some courses published recently, rather than 1789, the dividing date in older courses. The change gives more time for history which has had more immediate effect on present conditions. There are 21 courses that outline our national history by presidential administrations, but there is a favorable tendency toward a few large natural periods.

Nearly one-fifth (18.1 per cent) of all topics listed are topics in subjects belonging to the citizenship group. History contains more listed topics than any other subject. All but 18 history topics are distributed to the three upper grades, and all civics topics to the seventh and eighth (Table 18).

TOPICS IN ELEMENTARY SCHOOL HISTORY.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Slavery, slaves.	History stories.	*Government.
Historical pictures.	*Famous men, leaders.	*Trade, transportation.
Colonization, settlements.	*Home life, shelter.	American Revolution.
*Indians, Indian life.	*Nationalities in America.	Civil War.
Causes, effects.	Colonial governments.	French in America.
National growth.	*Thanksgiving Day.	Declaration of Independence.
Biographies.	English settlements.	Indian warfare.
*Manners, customs.	Spanish in America.	Louisiana Purchase.
Discoveries.	Dutch in America.	War of 1812.
*Education, schools.	†Historical maps.	
Explorations.	*European history (background).	
*National Constitution.		

*Topics marked with a star (*) have to do with affairs of to-day.

† Topics marked with a dagger (†) pertain largely to methods of teaching.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Historical events.
*International relations.
Formation of Constitution.
*Territorial expansion.
*Food, its distribution.
*Inventions.
*Modes of travel.
*Washington's Birthday.
Pioneer life.
*Industries, occupations.
Wars, conquests.
*Rivalry between nations.
*National holidays.
*Clothing, dress.
*Foreign affairs.
*Army, Navy.
Missouri Compromise.
Mexican War.
Continental Congresses.
*Political parties.
*Money systems.
*Telegram, The.
Articles of Confederation.
*Tariff and free trade.
*Panama Canal.
*Railroads.
*Agriculture, farming.
†Comparisons, contrasts.
†Development, changes.
*Printing, paper, books.
Northwest Territory.
†Books, references, use of.
Bible stories.
*Patriots, heroes.
*Religious, churches.
Spanish American War.
*Immigration, emigration.
*Roads, road building.
*Capital and labor.
Crusades, The.
Texas acquired.
Southern Confederacy.
*Treaties.
Administrations.
*Admission of States.
*Financial affairs.
*Cities and towns.
*Home State, History of.
Groups of colonies.
*Social life and affairs.
*Sports and amusements.
*Industrial growth.
*Products.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Myths, legends.
*Manufacturing.
†Correlated reading.
*Historical poems, songs.
*Memorial Day.
Primitive life.
†Collecting materials.
†Construction work.
*Lincoln's Birthday
*Elections, primaries.
Dred Scot decision.
*Industrial revolution.
Compromises.
Greeks, The; Romans, The.
†Correlated subjects.
*Land claims.
Secession.
Oregon Territory.
Reconstruction in the South.
*Cotton, cotton gin.
*Telephone.
†Correlated geography.
*Constitutional amendments.
Emancipation proclamation.
Abolition of slavery.
Colonial life.
Religious toleration.
*Taxation.
*Canals, waterways.
Ordinance of 1787.
†Paper cutting.
*Growth of the West.
United States a world power.
Fugitive slave law.
Spoils system.
Spanish Armada.
*Departments of Government.
Commercial interference.
*Gold and silver.
Western trade routes.
Confederation, The.
Critical period, The.
Kansas-Nebraska act.
Impressment of seamen.
*Fourth of July.
New England Confederacy.
*National Congress.
Florida acquired.
*Erie Canal.
*Presidents, The.
Compromise of 1850.
Civil-service reform.
*Steamboat, The.
*National highways.
State rights, sovereignty.
*Congressional debates.
Dates, time limits.
Boundary disputes.
Eastern trade routes.
Charter governments.
Colonization motives.
Stamp act, The.
Nullification.
*Monroe doctrine.
*Banks, banking.
Military achievements.
Local history.
*Fur trading, furs.
*Exposition, festivals.
Teutons, The; Germans, The.
French and Indian wars.
*Labor unions.
*Strikes, lockouts.
*Alaska Territory.
Business depressions, panics.
Magna Charta, The.
Battles, campaigns.
†History charts.
Geographical conditions.
Religious persecution.
*Revenues, expenditures.
*Cost of wars.
*Natural resources.
*Farm machinery, implements.
*Woman suffrage.
*Peace, peace conferences.

* Topics marked with a star (*) have to do with affairs of to-day.
† Topics marked with a dagger (†) pertain largely to methods of teaching.

The following suggestive topics appear in fewer than 40 per cent of the courses:

*Affairs of to-day—Arbitration, diplomacy; authors, men of letters; buildings, temples; Chinese "open door"; Christmas; child life; Columbus Day; communication, means of; conservation of natural resources; courts, trial by jury; Cuban relations; current events; domestic affairs; debts, National and State; fishing, fisheries; flags, United States flag; generals, soldiers; Hawaiian Islands; internal improvements; inaugurations; Indian reservations; inventors; land surveys; land tenure; mining, minerals; motives—national, personal; Philippine Islands; plantation life; population; Porto Rico; postal system; preamble to the Constitution; rural free delivery; scientists, science; seaports; ship building; State institutions; statesmen; trade relations; transportation, means of; trusts, corporations; universities, colleges; voting, the ballot; wars, cost of; women, famous.

Life: economic, industrial, institutional, political, religious, social.

Nearly one-half (47 per cent) of the listed topics pertain to the affairs of to-day. Topics on social, economic, and industrial life are few in number; while those on wars, political events, and pre-national history dominate the curriculum. Considered from the standpoint of such teaching aims for history as given in the Montana Rural Course noted earlier in this chapter, there is evident need for a reselection of history topics.

State courses of study give the names of 514 famous men and women, 54 laws and acts of Congress, 158 places, 35 wars and rebellions, 105 battles, 79 poems, songs and speeches, and 34 products. They also give 167 dates.

An effort was made to select the objective facts children should know when the history course is completed. The frequency with which such facts appear in courses of study fails to produce a truly representative and scientifically selected list. History courses of study for rural schools do not always give carefully selected names for study and for illustration of points made. The following names and titles appear in five or more courses. They are arranged under each topic heading in the order of their frequency of occurrence in State courses of study. The list is believed serviceable, even though only suggestive. The names and titles may be taken to represent very largely those facts which children should know when the elementary school history course is completed.

1. *Famous men and women*, whose achievements should be known, grouped by suggestive periods:

Bible characters—Joseph, David, Moses, Abraham, Daniel, Ruth.

Greeks—Alexander, Ulysses, Leonidas, Socrates, Hercules (legendary).

Romans—Julius Cæsar, Hannibal, Romulus (legendary), Cincinnatus, Horatius, Constantine.

Northern Europe—William Tell, Siegfried (legendary), William of Orange, King Canute, Luther.

Southern Europe—Marco Polo, King Philip, Queen Isabella.

French—Napoleon, Joan of Arc, William the Conqueror, Charlemagne, the Jesuits.

British—Raleigh, Alfred the Great, King Arthur, Queen Elizabeth, Robert Bruce, William Pitt, Richard the Lion Hearted, Cromwell, King John, Robin Hood.

Early people in America—Hiawatha (legendary), Samoset and Squanto, Pocahontas, Iroquois, Cliff and Cave Dwellers, Algonquins, Mound Builders, Eskimos.

Finding the New World—Columbus, La Salle, Magellan, De Sota, the Northmen, Cortez, Drake, Champlain, John Cabot, Marquette, Joliet, Hudson, Ponce de Leon, Balboa, Cartier, Sebastian Cabot, Vespucius, De Gama.

Making homes in the New World—Miles Standish, the Quakers, Pilgrim Fathers, William Penn, John Smith, the Puritans, Roger Williams, Lord Baltimore, John Winthrop, Oglethorpe, Peter Stuyvesant, the Patroons, the Cavaliers, the Huguenots.

Conflict and struggle for supremacy—Washington, Franklin, Daniel Boone, George Rogers Clark, Burgoyne, Lafayette, Patrick Henry, Benedict Arnold, Montcalm and Wolfe, Nathan Hale, Samuel Adams, General Greene, Cornwallis, General Marion, General Braddock, Paul Revere, George III, Robert Morris, John Hancock.

Forty years, 1789–1829—Paul Jones, Lewis and Clark, Jefferson, Webster, Hamilton, Clay, Robert Fulton, John Jay, John Adams, Calhoun, Madison, Eli Whitney, Commodore Perry, Monroe, Sevier.

Thirty-two years, 1829–1861—Jackson, Fremont, S. F. B. Morse, John Quincy Adams, Zachary Taylor, Buchanan, Wm. H. Harrison, Sam Houston, Kit Carson, David Crockett, Horace Greeley, McCormick, Longfellow, General Scott.

Four years, 1861–1865—Lincoln, Lee, Grant, John Brown, Farragut, Sherman, Douglas, Jefferson Davis.

Fifty-five years, 1865–1920—Andrew Johnson, Garfield, Roosevelt, McKinley, Cleveland, Harrison, Dewey, Edison, Taft, Wilson.

Some names appearing in fewer than five courses—Samuel, Paul, Confucius, Homer, Cicero, Peter the Great, Queen Victoria, Shakespeare, Livingstone, Florence Nightingale, Robert Louis Stevenson, Betsy Ross, Horace Mann, Audubon, Clara Barton, Frances E. Willard, Cyrus W. Field, Jane Addams, Carnegie, Burbank, Pershing, Foch, David Lloyd-George.

2. *Inventions and discoveries:* Approximate dates, important changes, chief benefits to man from each. Telegraph, railroads, printing, telephone, cotton gin, steamboat, harvester, canals, sewing machine, cables, electric light, locomotive, battleships, mariner's compass, wireless, threshing machine, gunpowder, electric car, automobile.

Appearing in fewer than five courses—Electricity, flying machine, phonograph, power loom, ether, vulcanizing rubber, gasoline, submarine, torpedo boat, picture machines, cream separator.

3. *Places of historic interest and battle fields:* Location and historic facts connected with each. Boston, Quebec, Bunker Hill, New Orleans, Lexington, and Concord, Gettysburg, Jamestown, New York City, Philadelphia, Trenton, Valley Forge, Richmond, Vicksburg, Waterloo, Constantinople, Yorktown, Charleston, S. C., Fort Sumter, Savannah, Rome, Saratoga, Plymouth Rock, Acadia, Genoa, Manila Bay, St. Augustine, The Hague, Athens.

4. *Products:* In what ways and to what extent each has contributed to the welfare of mankind. Money, cotton, furs, gold and silver, fish and game, forest products, live stock, coal, iron and steel, wheat, tobacco, corn, rice and sugar, oil and gas.

5. *Wars:* Limit study to wars mentioned in the list of topics, except the World War. The Montana Rural Course would give time for nothing more than geographical setting, remote and immediate cause, nature of military problems, opposing forces faced, resources for each side, plans and campaigns undertaken, study of one typical battle and mention of others, turning point, immediate and remote results, lessons taught, cost in life, suffering and treasure.

6. *Dates:* Time relations more important than exact dates. Most important historical fact or event connected with each.

1492, 1607, 1620, 1733, 1763, 1776, 1781, 1783, 1787, 1789, 1800, 1803, 1812, 1820, 1829, 1850, 1860, 1865, 1898, 1914.

7. *Compromises and laws:* Chief reasons for, important provisions of, and chief benefits derived from each.

Compromise of 1820, Compromise of 1850, Stamp Act, fugitive slave law, Kansas-Nebraska act, Magna Charta, embargo and nonintercourse acts, Bill of Rights, alien and sedition laws, Ordinance of 1787, interstate commerce act, pure food and drug act.

Constitution of the United States. Three constitutional compromises, seven divisions, preamble, recent amendments, departments of Government, chief powers of departments and of Congress, character of Government.

8. *Political parties:* Chief beliefs and years in power only. Party platforms in 1860 and of last presidential election. Federalists, Republicans, Whigs, Democrats.

9. *National growth and expansion:* How and from whom secured. Important results from each acquisition. Limited to topics in the survey list on the acquisition of territory by our country.

10. *Periods of business depression:* 1837, 1873, 1893, 1907. Development of effective means to prevent them.

11. *Home State:* Leading contributions to National and State history.

12. *Poems, songs, and speeches:* Correlated with reading and language.

Key.....Star-Spangled Banner.
Lincoln....Gettysburg Address.
Smith .....America.
Howe.....Battle Hymn of the Republic.
Finch. ....The Blue and the Gray.
Longfellow. Paul Revere's Ride.
Drake .....American Flag.
Jefferson...Declaration of Independence.
Longfellow. Hiawatha.
Longfellow. Courtship of Miles Standish.
Bryant ....Story of Marion's Men.
Holmes....Old Ironsides.
Whitman ..Captain, My Captain.
Longfellow. Evangeline.
Hemans ...Landing of the Pilgrims.
Read .....Sheridan's Ride.
Longfellow. Skeleton in Armor.
Miller .....Columbus.
Emerson...Concord Hymn.
Whittier...Barbara Fritchie.
Lincoln....Emancipation Proclamation.
Holmes....Grandfather's Story of Bunker Hill.

CIVICS.

Civics is one of the most useful subjects in which children need training, but it holds a very subordinate position in State courses. Class instruction has been limited to the one or two highest grades (Table 13). Correlated work with other subjects, particularly with history, and suggestive outlines for frequent morning exercises, are suggested as advisable changes from the present plan in most courses.

The following are the aims for the teaching of civics mentioned in State courses:

Knowledge of Government and our need for it.
Knowledge of the duties of citizenship.
Cultivation of right attitude toward Government.
Possession of the spirit of our democratic institutions.
Ability to read and interpret current events.

There is a growing tendency to outline history and civics together. The subjects have common aims. A single outline on a course in

citizenship, including all subjects of the group, permits closer organization and correlation of topics and aids the rural teacher in solving her program problems.

The survey list of topics shows that State courses of study subordinate community civics to facts of civil government. Most of them contain little or nothing of value in the training of children for citizenship in our democracy through civic activities, and in the solution of live civic problems.

TOPICS IN ELEMENTARY SCHOOL CIVICS.

Arranged in the Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

State government.
Rights and duties.
Government.
National Government.
County government.
National Constitution.
School district government.

APPPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Home and family government.
Officers, public office.
Village, town government.
Elections, nominations.
Comparison of governments.
Legislative department.
Courts, trial by jury.
Executive department.
Laws, lawmaking.
Judicial department.
City government.
Township, town government.
Education, schools.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Departments of Government.
Taxation.
Political parties.
Powers of Government.
Public health.
Money, coinage system.
Army, Navy.
Senators, Representatives.
Protection, life and property.
Constitutional amendments.
Revenues, expenditures.
Community civics.
How a bill becomes a law.
Patriotism.
Roads and bridges.
Postoffice, postal system.

Some suggestive topics appear in fewer than 40 per cent of the courses:

Banks, banking; care of poor; character lessons; churches; citizenship clubs; work of Congress; currents events; fire protection; food inspection; initiative, referendum, recall; naturalization; parcel post; parks, playgrounds; police system; property rights; public improvements; public institutions; public property.

The topics appearing in fewer than 14 courses indicate a tendency among progressive courses to give less attention to civil government, as such, and more attention to the civics which touches home and community life.

Bassett found that 25 significant and persistent civics problems cover the entire field of political discussions.[1] He determined their rank by frequency of mention and by linear inches of space in national party platforms from 1844 to 1916, inclusive. The topics are listed here in the order of their frequency of appearance in 35 State courses in history and civics, the figures giving the number of courses in which found. The rank order in Bassett's list is shown in the second column of figures.

Frequency of topics in State courses of study.

Topics.	Frequency.	Rank.	Topics.	Frequency.	Rank.
Constitution	29	17	Postal system	13	22
Education	26	21	Public office	12	2
Parties	22	19	Industry	11	24
Monetary system	21	9	Health	11	25
Public finance	20	1	Foreign relations	10	3
Suffrage	19	16	Moral reform	9	4
Justice	19	23	State rights	9	20
Legislation	17	12	Natural resources	7	7
Defense	16	10	Labor	7	8
Personal rights	15	15	Corporations	4	6
Commerce	14	13	Pensions	1	18
Immigration	14	5	Public works	0	11
Territories	13	14			

By comparison of civics problems as contained in party platforms with civics topics in State courses it is made evident that children have to go outside of civics courses to get the civics instruction they need. Only 7 of the 25 topics listed above appear more frequently in civics courses than in history courses.

MANNERS AND MORALS.

This subject holds the least prominent position among the subjects of the curriculum (Table 15). Twenty-seven States provide outlines or suggestions for the training of children in manners and morals. It is advisable to give suggestions on State courses regarding the training of children in proper manners and morals, but providing graded outlines on the various virtues is not justified by practice.

The dominant aim of moral education is the development of proper attitudes, giving rise to worthy conduct. The most frequently stated reasons for training in manners and morals are:

To cultivate a sense of moral obligation and duty.
To produce law-abiding, law-respecting citizens.
To arouse high moral ideals.
To kindle ambition and instill confidence.
To develop a moral character.

State courses of study are, in general, against formal instruction in morals at school. The most effective way of training children in

[1] Bassett, "The Content of the Course of Study in Civics," in Seventeenth Yearbook of the National Society for the Study of Education, Part I, p. 63.

manners and morals is, in all probability, through regular lessons and in connection with all school activities.

There are numerous virtues for the training of children. From 25 to 50 of the leading virtues may well be selected for occasional special attention during opening exercises. Opportune times at psychological moments should not be lost for special lessons in conduct.

TOPICS IN ELEMENTARY SCHOOL MANNERS AND MORALS.

Arranged in Order of Their Frequency of Appearance in 27 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

*Obedience.	*Patriotism.	*Truthfulness.
†*Honesty, reliability.	*Politeness.	Courage, bravery.
†Self-control.	†Kindness to animals.	*Courtesy.
†Justice, fairness.	†*Industry, good workmanship.	Regard for others.
†Kindness to others.		

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Charity.	Good manners.	*Reverence.
†*Cleanliness.	Helpfulness.	Self-respect.
Neatness.	Generosity, hospitality.	Cheerfulness.
Promptness.	Service.	Patience.
*Respect.	†Cooperation.	Faithfulness.
Accuracy.	Personality.	Responsibility.
†Fidelity, loyalty.	*Punctuality.	

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Gratitude.	†Health.	Perseverance.
Nobility.	Thankfulness.	Leadership.
Forgiveness.	Right conduct.	High ideals.
†Duty.	Self-reliance.	Purity.
Love.	Orderliness.	Unselfishness.
Temperance.	Honor.	

A content that is vital to the life of children is also vital to their moral development. Courses in arithmetic, history, reading, language, and geography should become more truly moral courses by having woven into their outlines the socialized moral contents vital to a child's life. The most effective way of presenting morals in courses of study is, in all probability, through the regular lessons in all subjects. Courses in the various subjects are lacking helpful suggestions on effective correlation.

Every subject should be made a moral subject. "A subject of study consisting of material so selected and so organized as to influence behavior in some desirable way is, undoubtedly, a moral course." If this is to be the ideal of the new rural course, then many State

* Ten virtues most necessary to be established in children as selected by 1,000 Oregon teachers in 1917. (Reported by the State superintendent of Oregon.)

† Contained in "Children's Code of Morals for Elementary Schools," National Institute of Moral Instruction, Washington, D. C.

courses need to be so rewritten as to contain the functional material that results in desirable conduct.

RECOMMENDATIONS.

The following principles of guidance for the improvement of courses in citizenship for rural schools are suggested:

(*a*) Ungraded general suggestions provided for the teaching of each citizenship subject.

(*b*) Graded outlines in history provided for grades five to eight.

(*c*) History and civics outlined with language in the four lower grades. For grades five to eight history and civics outlined together.

(*d*) Manners and morals made a part of the socialized moral content of every subject.

(*e*) Training for intelligent citizenship made dominant.

(*f*) Study of American history in upper grades preceded by the story history of Europe.

(*g*) Those content materials in history selected that explain the present.

(*h*) Community civics emphasized with less attention to mere facts of government.

(*i*) Material organized about live problems on a level with the ability of children. National history broken up into lengthened periods for study.

(*j*) Selection of those objective facts which should be quite generally known.

Chapter IX.

ANALYTIC SURVEY OF ELEMENTARY SCIENCE SUBJECTS.

Science is a fundamental subject for the elementary schools. The child that has not had instruction in elementary science "has missed a vital part of his life" for "he can not himself derive so much pleasure from life, he can not be so successful, nor can he be of so much service to others."[1]

The general term "elementary science" is made to include in this chapter geography, hygiene, physical education, and nature study. To include geography a broader interpretation of elementary science is needed than is commonly applied to it. Geography is constantly dealing with science topics,[2] but it is no more the real science of geography than languauge is grammar or that nature study is botany or physics. Six States provide courses in elementary science, and these sometimes include some simpler experiments in physics and chemistry, but not geography. Physical education was placed in this chapter because of its close relation to hygiene. The only phase of science not included in this group is agriculture. In its practical applications for an elementary subject, agriculture belongs so largely to the field of industry that it was thought best to connect it with that group (Ch. X).

As a group, elementary science subjects hold a central position in the curriculum. State courses give these subjects one-sixth (16.1 per cent) of recitation time and 23 per cent of the space given to all subjects (Table 17). The subjects are rich in materials, for the courses contain 852 topics, 56 per cent of which have not been included in the survey lists. The most prominent subject of the group is geography. Physical education has been very largely neglected in rural schools.

GEOGRAPHY.

The average elementary science course contains 46.6 pages, 20 pages of which are devoted to geography (Table 17). The major part of the geography work is given in grades four to seven. Four years for class instruction in geograghy is all that a rural program usually contains.

[1] Trafton, The Teaching of Science in the Elementary Schools, p. 9.
[2] Ibid., p. 23.

General aims are mentioned infrequently. They may be stated as follows:

Train the senses on observation.
Develop the power to think clearly.
Give ability to join things together.
Give ability to locate places and things of interest.
Cultivate and develop the imagination.
Acquire a body of useful knowledge about the world.
Understand home and surrounding conditions.

Some of these aims are quite as well adapted to other subjects. Quite in contrast are the following aims, taken from the Montana Rural Course:

To give children the power to solve the simpler geographical problems bearing upon human life.
To establish habits of thinking clearly and accurately in this problem solving.
To instill in children a sincere respect for all mankind.
To meet adequately the growing needs for useful geographical knowledge.

There is no agreement as to the best plan for organizing geographical material. The problem method is given prominence in the New Jersey, Ohio, Minnesota, and Montana courses.

The courses of study mention quite frequently such teaching helps as maps, pictures, and books on travel. Many of these helps are indispensable in school work.

Geography is especially rich with materials. The survey list contains 146 topics. Many of these refer to physical features, rather than to the simpler geographical problems of every day life.

TOPICS IN ELEMENTARY SCHOOL GEOGRAPHY.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Climate.	Plant life.	United States.
Rivers, river basins.	Location, direction.	Observational geography.
Rain, rainfall.	Exports, imports.	Continents.
Mountains, hills.	Lakes.	Soils.
Human life, people.	Products.	Winds.
Animal life.	Highlands, elevations.	Industries, occupations.
Comparative geography.	Seasons.	North America.
Cities.	Mineral products.	Europe.
Surface.	Vegetables.	

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Map drawing.	Ocean currents.	Population.
Commerce.	Fruits, nuts.	Africa.
Plains.	Valleys.	Australia.
Causes, effects.	Political divisions.	Relative areas.
Manufacturing.	Oceans.	Land forms.
Asia.	Food, its distribution.	Agriculture.
South America.	Snow, ice.	Drainage.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES—continued.

Wind belts.
Farm life.
Water forms.
Islands.
Railroads.
Commercial cities.
Forests, trees.
Governments, comparison of.
Clothing, dress.
Latitude.
Physical features.
Water life.
Heat belts.
Longitude, time.
Globe study.
Lowlands, depressions.
Air pressure.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Places of scenic interest.
Divides, mountain axes.
Indentations.
Shelter, homes.
Frosts, dew.
Weather records.
Temperature.
Trade routes.
Iron, steel.
Mining.
Story geography.
Excursions, field trips.
Harbors, docks.
Grassy plains, prairies.
Land, water distribution.
Corn.
Tropical fruits.
Wheat.
Boundaries of countries.
Coast line, shore forms.
Wool, woolens.
Collected specimens.
Descriptive geography.
Weather.
Absolute areas.
Navigable rivers.
Product maps.
Deltas.
Means of transportation.
Moisture, humidity.
Fishing.
Industrial geography.
Type studies.
Herding, grazing.
Deserts.
Irrigation.
Cattle.
Customs, manners.
Canals, waterways.
Cloudiness.
Drawing, modeling.
Atlantic coastal plain.
Relative position, location.
Manufactured products.
Children of other lands.
Home geography.
Map reading.
Domestic animals.
Map study.
Races of men.
Slopes.
Lumber, lumbering.
Relief maps.
Imaginary journeys.
Home State.
New England States.
Forest products.
Map of small areas.
Sun, moon, stars.
Sugar.
County, township maps.
Cotton goods, cotton.
Plateaus.
Glaciers, glaciation.
Insects, insect life.
Motions of the earth.
Education, schools.
Coal, coal mines.
Cereals, grains.
Farm crops.
Physical geography.
Picture study.
Peninsulas, isthmuses.
Social life.
Roads, road building.
Dairying, stock raising.
Gold, silver.
Animal products.
Forage crops.
United States by sections.
Commercial geography.
Indians.

The following suggestive topics, appearing in fewer than 40 per cent of the courses, are classified for convenient reference under larger topics of which they form a part:

Physical features: Day and night, zones of light, planets and the solar system, evaporation and condensation, land erosion, volcanoes, capes, canyons, waterfalls, waves and tides, barriers to migration.

Life: Wild animals, birds; tundra, orchards, vineyards; health and healthfulness, population; Arabian life, Chinese life, Eskimos.

Countries, regions: Oceanica, product regions, colonial possessions, Great Basin, Gulf Coastal Plain, Lake plain, Piedmont belt.

Industries: Hunting, quarrying, shipbuilding, planting and harvesting, truck gardening, fruit growing, meat packing.

Products: Barley, berries, coffee, potatoes, rice, salmon, spices, tea, tobacco; flax and linens, furs and feathers, hemp and jute, leather goods, rubber, rugs and

carpets, silk, boots and shoes; horses, sheep, swine, dairy products; copper and lead, marble and granite, nitrates, and phosphates, oil and natural gas, salt, sand, clay and lime, precious stones; household furnishings, machinery and implements, vehicles, building materials, public buildings, drugs.

Trade: Means of communication, highways of travel, steamships, trade relations, travel and touring.

Government lands, natural resources, wealth, and poverty.

Almost as many topics (142) appear in fewer than 40 per cent of the courses as appear in more than this number of courses. These topics mentioned less frequently are very similar in type to those in the list above. The abundance of teaching materials points to the need of their close organization, which may possibly be done best in the form of problems.

Topical outlines for use in connection with the study of many countries are given in some courses. The writer believes these should be omitted from the courses, or modified to conform in "type" to the outline submitted.

I. Physical features:
   (*a*) Relative location; relative area.
   (*b*) General form. In comparison.
   (*c*) Selected border lands and surrounding waters. Commercial importance.
   (*d*) Character of shore line. Commercial importance.
   (*e*) Most prominent surface features. How they affect man.
   (*f*) River systems. Commercial importance.
   (*g*) Character and fertility of soil. How it favors or hinders man in his work.
   (*h*) Climate—temperature, winds, rainfall. Causes and effects.
   (*i*) Life—human, plant, animal—as affected by physical features.

II. Political divisions:
   (*a*) Large countries, place among powers.
   (*b*) Population. Occupations of laboring classes. Language, education, government, chief characteristics. Cities as industrial and trade centers.
   (*c*) Important products—kind, abundance, value—from farm, factory, mine, forest, or sea.
   (*d*) Nearness to market, trade and transportation. Effect on development of region or country.
   (*e*) Special features—places of scenic or historic interest.

III. Educative map drawing or sketching to accompany study.

Ten courses allot 14 per cent of program time in geography to physical features and 16 per cent to home geography. In the same courses the content materials are assigned to six grades. By organizing the course in geography according to the problem method, as is done in the Montana course, no time would be allotted either to home geography or to physical features as such. Problems in relational facts should give all the facts needed and their solution should train children to apply such facts to the everyday problems of life.

Recommendations regarding facts of place are not lacking in quantity. State outlines in geography contain the names of 78 countries, 146 land farms, 160 water farms, 302 cities, 53 places of interest, 250 plants, animals, and products, 30 occupations of men, 16 human types, and 83 famous historians. The farm, factory, mine, forest, and sea are common sources of products. A representative list of objective facts of place in their relational aspects would be a useful guide both for curriculum writers and class teachers.

HYGIENE.

Hygiene outlines in some courses are brief and inadequate. One-third of the space given to these outlines is allotted to general suggestions. The largest percentage of grade space is allotted to grades six and seven.

A few motivated and well-stated aims in teaching hygiene are given, but they appear very infrequently. Those mentioned in 10 or more courses are:

Establish health habits.
Preserve and improve bodily health.
Establish habits of personal hygiene.
Secure and keep an efficient body.
Establish sanitary habits.

Very few courses give anything in the way of helpful suggestions on the best methods to be used in teaching or training. Hygiene instruction in rural schools is known to be poor. Inadequate courses, lacking in methods, may have had much to do with the poor teaching found in schools.

TOPICS IN ELEMENTARY SCHOOL HYGIENE.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Health habits.	Alcohol, its effects.	*Heat, heating.
Eating (how, what).	Food, food values.	Health, its care.
Sleep, rest.	†Accidents, emergencies.	Care of eyes.
Purity of water.	*Muscles, muscular system.	*Lungs, their care.
*Digestion.	Pure fresh air.	*Eyes, sight.
*Blood, blood vessels.	Care of body.	Cooking, serving.
Clothing, its care.	Tobacco.	*Ears, hearing.
Position, carriage.	*Breathing.	*Heart, heart action.
Care of teeth, mouth.	*Nerves, nervous system.	Tea, coffee.
Exercise, recreation.	Neatness, cleanliness.	Bones, skeleton.
Care of hair, nails.	Milk, its care.	†Wounds, cuts, bruises.
Stimulants, narcotics.	Bathing.	†Contagious diseases.
Sanitation.	*Circulation.	*Brain, spinal cord.

*Topics marked with a star (*) pertain largely to physiology.
† Topics marked with a dagger (†) refer to diseases.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

*Perspiration, the skin.
*Respiratory system.
Ventilation.
Care of the skin.
*Nose, smell.
*Special senses.
*Structure of organs.
Voice, its care.
*Functions of organs.
Proteids, meats.
Plays and games.
†Burns, blisters.
Flies, mosquitoes.
†Disease germs.
†Common diseases.
Physical exercises.
†Tuberculosis.
Care of the ears.
†Blood poisoning.
*Teeth, their structure.
†Drowning.
†Typhoid fever.
Fruits, vegetables.
Personal hygiene.
*Stomach, its uses.
*Throat.
†Choking, coughing, sneezing.
†Colds, their prevention.
Health regulations.
†Fainting, fits.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

*Organs of the body.
*Tendons, ligaments.
*Touch, feelings.
†Adenoids.
Testing eyes.
Cigarette smoking.
Food varieties.
Disinfectants, antiseptics.
*Kidneys, The.
Hygiene of organs.
*Tongue, taste.
*Excretory organs.
*Absorption, assimilation.
*Intestines.
*Oxidation, blood purity.
†Fevers, headaches.
First aid.
Experiments.
*Mastication.
†Bacteria.
Food, its care.
*Tissue cells.
Soap, toilet articles.
Table manners.
Animals, their care.
†Scarlet fever.
†Smallpox.
†Nose bleeding.
Garbage, its disposal.
Sunshine, its value.
†Broken bones, dislocations.
Public health.
*Waste products.
†Measles.
Air composition.
Preventives.
*Organs of secretion.
†Diphtheria.
*Glands, their work.
Nutrition.
†Preventable diseases.
Drainage, sewerage.
*Lymph, lymphatics.
*The liver, its work.

The following suggestive topics appear in fewer than 40 per cent of the courses:

Adulteration, antitoxin, bandaging, candy and chewing gum, getting rid of dirt, drinking fountains, drugs, dust and dusting, fires and matches, food inspection, food laws, ice and its uses, insects and health, school lunches, medical inspection, patent medicines, relaxation, sleeping rooms, sanitary surveys, vaccination.

While topics in physiology no longer dominate the curriculum, they are still prominent. They are usually presented without showing how they support health habits. In this lies their chief weakness.

The courses of study are very largely negative in that they state what not to do and how to cure, rather than how to prevent and to avoid. This is even more evident from the topics appearing in 5 to 13 courses than from the survey list. Preventative measures would make fewer occasions for the use of corrective methods.

Practically all the topics pertain to the acquisition of knowledge, rather than to proper habits and ideals. Proper ideals and attitudes

* Topics marked with a star (*) pertain largely to physiology.
† Topics marked with a dagger (†) refer to diseases.

and the formation of health habits are exceedingly slow in developing under the influence of "bookish discussions."

The hygiene courses of the future, as indicated by recently published courses, are to be dedicated to an exclusive health program. They encourage the establishing of health habits and the cultivation of high ideals, both as to personal and community hygiene.

PHYSICAL EDUCATION.

Physical education is one of the most neglected school subjects. Nineteen States provide no outline in this subject (Table 9). Some courses provided are brief and inadequate. Little attention has been given the subject in rural schools.

For rural schools there is little need for grade division of work found in a few courses. Three-fourths of the space assigned to physical education is given to general suggestions (Table 13).

The most frequently mentioned aims are:

Make children physically fit.
Promote health among children.
Establish habits of correct thought and action.
Secure a cheerful, friendly disposition.
Develop morality and build character.
Secure orderliness and good behavior.
Develop spontaneity and initiative.

The aims usually mentioned in courses are important, but they are given incidentally and infrequently. In consequence, teachers are likely to continue following the traditional track of care-free recesses and noons.

Little mention is made of supervised playgrounds, organized play, or methods of instruction in physical education, except through games. Their importance suggests the need for definite directions in organizing the school for play activities.

The following topics in physical education, arranged in the order of their frequency of appearance in 25 State courses of study, appear in 10 or more courses:

Sports, amusements.
*Plays and games.
Races.
*Physical exercise.
*Folk dances.
*Dances, dancing.
*Dancing games.
Relay races.
Ball games.
*Singing games.
*Team, group play.
*Recreation.
*Gymnastics.
*Correct position, posture.
*Athletics.
*Playground games.
*Correct breathing.
Supervised play.
Strength tests.
Running and hiding.
*Whole body exercises.
Tag games.
Cooperation.
Hopping games.
Swimming exercises
*Formative exercises.

Most of the 26 topics in the survey list pertain to plays and games of one kind or another. Fourteen of them are given by Rapeer as reported in the Sixteenth Yearbook.

*Topics marked with a star (*) are contained in Rapeer's list of "Minimal Essentials in Physical Education," in the Sixteenth Yearbook, Part I, pp. 183-184.

Bean-bag games, building games, calisthenics, corrective exercises, dashes, first aid, safety first, jumping, leaping, marching, observing rules, rowing, schoolroom games, skating, stretching, walking, wrestling.

There is a tendency to include under physical education all topics bearing on vital efficiency. Correlation with hygiene is essential to a realization of desired aims. It would be well to devote some class periods in hygiene to the study of problems growing out of school and home physical activities. That which the home and community do not supply the school must give, if desirable standards are to be reached. The school should assume a measure of control and wise direction over outside activities. For this purpose the following topics might well be included or correlated with this subject:

*Free play, *caring for animals, or *home chores, health chores, *easy calisthenic exercises, handicrafts, *manual training, *gardening, *domestic science, *fire drills, *Scout and Camp Fire activities, *rhythmic games, *excursions or hikes, dramatization, and *relaxation exercises.

State courses give the titles of 706 games and exercises. It is advisable to include descriptions of selected games in the course of study, if such descriptions are not otherwise made available for the schools.

A certain amount of equipment is essential to effective training. Suggestive lists may well be included in courses.

Irresponsibility for and nonattention to children's play activities are likely to continue so long as teachers are not brought under the direct supervision of a course of study fully explaining the meaning, method, value, and responsibility for organized play and setting forth definite helps in making playground and school activities contribute to vital efficiency.

NATURE STUDY.

Nature study is one of the prominent subjects for primary and intermediate grades (Table 13). It occupies a central position among the subjects of the curriculum.

The rapid decrease in the amount of space allotment for the grades from the first to the eighth indicates a common practice in one-teacher schools of organizing one or two classes for lower and intermediate grades.

The aims mentioned most frequently are:

Develop the habit of close and exact observation.
Develop an intelligent appreciation of nature.
Bring the child into an intelligent, sympathetic relation with his environment of nature.
Interest the child with nature about him.
Create interest in and supply needs of other subjects.

The most commonly stated aim is that of cultivating the habit of observation. Students of nature study would make nature study's

* Topics marked with a star (*) are contained in Rapeer's list of "Minimal Essentials in Physical Education," in the Sixteenth Yearbook, Part I, pp. 183–184.

contribution to the joys of living and the cultivation of right attitude toward life the leading aims.

It is doubtful if generalized observation methods without definite directions have given help of any consequence to the average teacher untrained for this work. The problem method for organization of content and for instruction gives promise of real teaching and the cultivation of a right attitude toward life.

The topics mentioned most frequently are fairly representative of the teaching materials nature study has to offer. The relative amount of attention to be given each topic is a matter for local adaptation. There are many topics which did not appear frequently enough to place them in the survey list.

TOPICS IN ELEMENTARY SCHOOL NATURE STUDY.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Animals, animal life.	Butterflies, moths.	Tree studies, forests.
Plants, plant life.	Fruits, nuts.	Seeds, seed studies.
Birds.	Insects, insect life.	Cat, dog.
Stems, roots, bulbs.	Observation lessons.	Vegetables.
Classification of animals.	Flowers, buds.	Habits of animals.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Leaves.	Snow, ice.	Care of animals.
Soils, rocks.	Winds, rainfall.	Evergreen trees.
Bird migration.	Birds, nests, nesting.	Cattle.
Collected specimens.	Seed germination.	Frogs, toads.
Sun, moon, stars.	Wild flowers.	Life history of animals.
Food of animals.	Uses of animals.	Bees, honey.
Gardening.	Domesticated animals.	Grain, cereals.
Horses.	Wild animals.	
Weather.	Flies, mosquitoes.	

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Identifying plants.	Weeds, weed studies.	Enemies of animals.
Shade trees.	Corn.	Heat and light for plants.
Frost, dews.	Excursions, field trips.	Window gardens.
Plant growth.	Care of plants.	Clouds, mist, fog.
Pet animals.	Weather records.	Day, night.
Cocoons.	Animal characteristics.	Signs of spring.
Seasons.	Grasshoppers.	Air and water for plants.
Seed dispersion.	Natural phenomena.	Seasonal topics.
Poultry.	Planting.	Swine.
Collected seeds.	Snakes, turtles.	Shrubbery.
House plants.	Kindness to animals.	Vines.
Drawing exercises.	Ants.	Direction, location.
Identifying animals.	Experiments.	Orchard fruit.
Bird songs and calls.	Names of birds.	Grasses.
Water studies.	Bird calendar.	Picture study.
Sheep.	Bird habits.	Potatoes.
Air, temperature.	Earth worms.	
Wood, tree products.	Minerals.	

Many topics did not occur frequently enough to be included in the survey list. The following topics appeared in fewer than 14 courses:

Animals—their clothing, homes, intelligence, means of self-defense and training. Household pests—bugs and beetles, insects, spiders, fish, pond life, snails and slugs.

Plants—shapes, forms and sizes, characteristics, plant descriptions, plant food, poisonous plants, flowering plants, uses of plants. Farm crops—cotton, hay and pasture, oats and rye, wheat. Garden flowers; school gardens.

Minerals—coal, iron.

Natural phenomena—weathering and erosion, freezing and thawing, heat, landscape study, light and sounds, streams, seasonal changes, fire and its uses.

Method topics—bird diagrams, collecting nests, flower calendars, clay and sand models, mountings, pressing specimens, exhibits.

There is a large amount of repetition of the same work in the several grades. This may cause the average child to lose interest and cultivate a dislike for nature. Rotation by years within a class made up of children from three or four grades is a possible means of correcting this tendency.

Possibly the greatest weakness in efficient nature study in country schools is the lack of proper training possessed by the average teacher. Until more teachers have had proper training in nature study the needs of the subjects are not likely to be keenly felt, however vital the subject may be to our every day lives.

RECOMMENDATIONS.

The following directions for the improvement of courses in geography, hygiene, physical education, and nature study for rural schools are suggested:

(*a*) Outlines provided in geography for grades four to eight, in hygiene for grades six and seven, and in nature study for grades one to four.

(*b*) In lower grades geography correlated with nature study and hygiene with language.

(*c*) A general ungraded outline provided in physical education.

(*d*) Meaningful aims provided for each subject and for each grade. These aims set at the head of each outline, and apart from it, as important considerations.

(*e*) The best methods of teaching each subject made prominent.

(*f*) The courses organized about related problems, graded as to difficulty and properly motivated with definite suggestions on best ways of accomplishing the assigned tasks.

(*g*) Definite directions regarding the organization of the school for play activities clearly set forth.

(*h*) Those content materials selected which best meet our needs for geographical knowledge, which make for healthful living, and which cultivate high ideals and right attitude toward life.

(*i*) In geography those relational facts selected which children may be expected to know when the course is completed.

(*j*) Full explanation of meaning, method, value, and responsibility of teachers for organized and supervised play.

(*k*) The amount of repetition of the larger topics in geography and hygiene reduced to a minimum.

Chapter X.

ANALYTIC SURVEY OF INDUSTRY AND ART COURSES.

Modern education has stressed the useful and functional side of every subject. The arts of beauty—drawing and music—have been so modified as to make their grouping with the useful arts—agriculture, household arts, and manual arts—advisable for the purpose of this survey. In the survey report household arts includes cooking, sewing, and household management; and manual arts includes so-called industrial or seat work for lower grades.

This is the most neglected group of subjects. Primary causes in this neglect have been the lack of preparation and experience of country teachers and the small time allotment on daily programs (Table 6). The fundamental subjects have kept industrial subjects off the programs. The subjects of this group are rich in content materials, and the vital relation of this material to rural life gives rise to a need for better teachers of the subjects and for more time for these subjects on the schedule of classes.

More than one-fifth (22.3 per cent) of the space given to all subjects is allotted to the subjects of this group (Table 12). One of the most important, as well as one of the most prominent subjects in the rural school curriculum is agriculture. Agriculture and household arts are seventh and eighth grade subjects. There is fairly even grade distribution of space for the other subjects of the group, and some attention is usually given to them in all grades (Table 13).

The subjects of this group have much to do with activities of a varied nature; hence, the doing side should be stressed. Much of the work can be presented, and properly, too, in the form of projects and problems. Courses of study have not, as a rule, emphasized the need for proper methods of teaching these subjects.

AGRICULTURE.

There is little agreement as to the most important aims in teaching agriculture. Some courses are weak in not presenting live aims or in their failure to state aims simply and clearly. The aims appearing most frequently in the courses are:

Create interest in and respect for farming.
Develop ability to apply knowledge to farm practice.

Utilize the everyday experiences of children fully.
Cultivate the power of observation.
Promote health, happiness, and prosperity.

The most common method of teaching agriculture is the textbook method. Teachers have been encouraged in the use of this method by the type of outlines in some States. There are few method topics. The project and the problem methods are coming into use.

Agriculture is exceedingly rich and varied in content materials The materials have to do with plant culture (47 per cent), animal husbandry (20 per cent), farm management and improvement (27 per cent), and plans and methods of teaching (6 per cent). Facts about farm work are emphasized. The large amount of teaching materials gives rise to a need for principles of guidance in their selection, to make it possible for rural teachers to select content wisely.

TOPICS IN ELEMENTARY SCHOOL AGRICULTURE.

Arranged in the Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Soils, soil.	Soil moisture.	Trees, tree planting.
Planting, sowing.	Experiments.	Plant growth.
Corn.	Animal husbandry.	Drainage, irrigation.
Seed testing, germination.	Farm buildings.	Soil fertility.
Seed studies.	Plant diseases.	Orchard fruits.
Potatoes.	Swine.	Sheep.
Insects, insect life.	Plant food.	Weeds, weed studies
Agricultural clubs.	Plants, plant life.	Observation lessons.
Vegetables.	Dairying.	Breeds, breeding.
Seed selection.	Clover, alfalfa.	Cattle—beef, dairy.
Poultry.	Manure management.	Gardening.
Fertilizer, fertilization.	Plant propagation.	Feeds, feeding.
Soil cultivation.	Forage crops, legumes.	Marketing.
Farm crops.	Horses.	

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Soil composition.	Capillarity of soil.	Budding, grafting.
Seed-bed preparation.	Grains, grain studies.	Sanitation, cleanliness.
Plant enemies.	Domestic animals.	Soil improvement.
Exhibits, fairs.	Crop rotation.	Transplanting.
Fruits, nuts.	Soil elements.	Corn judging.
Humus soil.	Insect enemies.	Fruit varieties.
Roots, stems.	Milk, its care.	Vegetable gardens.
Harvesting.	Home gardens.	Apples.
Livestock.	Rust, smut, blight.	Uses of animals.
Spraying.	Plowing.	Wheat.
Milk testing.	Expense problems.	Drawing, drawings.
Storing, curing.	Animal characteristics.	Shrubbery.
School gardens.	Oats.	Study of tools.
Collected specimens.	Grasses.	

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Plant structure.
Birds.
Water studies.
Hotbed, coldframe.
Crop production cost.
Tree pruning.
Sales, profits.
Classification of animals.
Farm management.
Air composition.
Yields, prices.
Type forms.
Milk composition.
Destroying weeds.
Fungicides.
Farm machines, implements.
Balanced rations.
Accounts, records.
Bees, honey.
Eggs, their care.
Fruit growing.
Garden planning.
Roads, road building.
Pasturing, grazing.
Life history of animals.
Varieties of corn.
Incubating, hatching.
Grading, scoring.
Seed structure.
Soil weight.
Economy in buying.
Flies, mosquitoes.
Control of insects.
Seed purity.
Tomatoes.
Poultry houses.
Picture study.
Soil acidity.
Plants and osmosis.
Judging products.
Seed identification.
Seed vitality.
Seed dispersion.
Bacteria, nodules.
Farm library.
Diseases of animals.
Animal habits.
Cutting of plants.
Small fruits.
Barley, rye.
Lime, its uses.
Making surveys.
Nursery stock.
Excursions, field trips.

All the topics in the list above may be arranged in groups under the following heads. Figures indicate the number of topics in each group.

1. Plant culture, 64 topics or 47 per cent of all topics:
   (*a*) Farm crops, 26-grain, grain studies, 7; hay and forage, 6; garden products, 3; fruit growing, 8; other crops, 2.
   (*b*) Tree culture, shrubbery, 5.
   (*c*) Weeds, weed studies, 2.
   (*d*) Seeds, seed studies, 2.
   (*e*) Plant enemies and diseases.
   (*f*) Plant physiology and propagation, 6.
   (*g*) Soils, soil studies, 12.
2. Animal husbandry, 27 topics, or 20 per cent of all topics:
   (*a*) Cattle, dairying, 5.
   (*b*) Other farm animals, 6.
   (*c*) Types and uses of animals, 7.
   (*d*) Feeds, feeding, 2.
   (*e*) Birds, bees, insects, 6.
3. Farm management and improvement, 36 topics, or 27 per cent of all topics:
   (*a*) Garden management, 6.
   (*b*) Crop production, 6.
   (*c*) Fertilization and drainage, 5.
   (*d*) Marketing, 4.
   (*e*) Farm building, 3.
   (*f*) Farm machinery, 2.
   (*g*) Accounting, 6.
   (*h*) Good roads, farm sanitation, farm survey, 1 each.
4. Plans and methods of teaching, 9 topics, or 6 per cent of all topics.

There are some valuable topics among those appearing in fewer than 14 courses, depending upon their local adaptation. Dry land farming, silos and silage, grape culture, and corn clubs are topics of this nature. Other topics, such as social center, crop surveys, farm economy and farm planning, are adapted for general use in most rural schools in all parts of the United States.

Suggestive topics of a more general nature are:

Cover crops, fruit preservation, vines and vine crops, bulbs and roots, seed cleaning, fungus plants, molds and mildews, subsoiling, turkeys and geese, butterflies and moths, household pests, insecticides, building materials, knots and knot tying, fences and fencing, lawns and yards, flower gardens, inventories, keeping records, farmers' organizations, score cards and scoring, farm surveys.

State courses usually provide one outline for each of the two highest grades, the courses alternating by years. It is only one step further in grouping children in grades five to eight into one class, providing an outline for each of the four years on different phases of agriculture and rotating these outlines over a period of four years. The idea is to teach nothing in elementary agriculture in the one-teacher school more than once in four years. The four subjects rotated are: Growing things, making things, live things, and soil and home. It is claimed that the plan changes disorganized schools into beehives of activity, arouses tremendous community interest in schools, puts life into the school, teaches children in the language they can best understand, and results in numerous petitions to have the plan continued.[1] If it does all these things, it can not replace the textbook method of teaching any too soon. The plan has appeared as a fully organized course in Missouri (1919), and in parts of Oklahoma, South Dakota, and Nebraska.

Another plan that has been fostered to vitalize teaching in rural schools is to provide pupils' survey outlines upon selected topics, such as poultry, cattle, corn, or roads. Under the direction of the teacher pupils gather the data, assemble them, and utilize the findings in innumerable ways in the various school subjects. The successful operation of school agricultural surveys has intensified interest in school work and aroused whole communities into active cooperation for school and community betterment.

Collection of materials locally is needed to permit the study of things by direct observation. Courses of study should contain lists of suggestive equipment for ready reference. Agricultural bulletins and circulars are prominently mentioned. Care should be taken to recommend those available bulletins that give valuable information and which are within the comprehension of children using them. Circulars on the use of certain bulletins in schools are especially valuable.

[1] Holden, The Rotation Plan. The International Harvester Co., Chicago.

HOUSEHOLD ARTS.

This subject includes cooking and sewing, which are equally prominent in the curriculum, and household management, mentioned in only a few courses.

Four-fifths of the State courses provide outlines in the subject. Like agriculture, household arts is an upper-grade subject. In one-teacher schools the work may well be alternated by years.

There is little agreement as to what constitutes the chief aims in household arts. Ability in solving the simpler problems of plain cooking and sewing and of home making is mentioned most frequently. To this may be added habits of thrift and of health and the development of business ability.

The only feasible method of teaching cooking in one-teacher schools appears to be through the hot lunch and home projects. Sewing and household management can be taught at irregular periods, through contests, home projects, and correlation with other subjects.

TOPICS IN ELEMENTARY SCHOOL HOUSEHOLD ARTS.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Cooking practice.	Patching, mending.	Darning stockings.
Study of stitches.	Hemming.	Apron making.
Basting.		

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Fruits, nuts.	Recipes, menus.	Running stitches.
Serving meals.	Breakfast foods.	Cotton, cotton cloth.
Milk studies.	Canning.	Overcasting stitches.
Study of meats.	Study of soups.	Garment making.
Study of potatoes.	Study of sugar.	Cutting, fitting.
Eggs and their care.	Study of vegetables.	Buttonhole making.
Cake baking.	Backstitching.	Repairing cloth.
Food, food values.		

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Food preparation.	Preparing sauces.	Towel making.
Study of salads.	Patterns.	Bed making.
Needlework.	Overhauling garments.	Embroidery.
Wool, woolens.	Sewing on buttons.	Making clothing for self.
Weaving.	French seams.	Study of seams.
Bread, bread baking.	Baking.	*Laundering.
*Setting tables.	Food composition.	Frying of fish.
Preserving.	Food preservation.	*Kitchen utensils.
Coffee, tea.	Biscuit baking.	School lunches.
*Household management.	Beverages.	Fats, oils.
Cooking rice.	Boiling.	Jellies, jams, butters.
Leveling agents.	Gathering stitches.	Fancy stitches.
Puddings.	Sewing machine.	Chain stitches.

* Topics marked with a star (*) pertain to home making.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES—continued.

Workbag making.	Use of sewing tools.	*House cleaning.
*Designing, decorating.	Textiles.	Pillowcase making.
Linens.	*Correlated subjects.	Baking muffins.
Buttonhole stitches.	Sewing by hand.	Candy, fudge.
Cross-stitches.	Undergarment making.	*Neatness, cleanliness.

The following suggestive topics appear in fewer than 40 per cent of the courses:

Cooking: Preparing foods, drying, flavors and extracts, garnishing, pickling, roasting, seasoning, stewing, cereal dishes, planning meals, digestibility of foods, economy in buying and serving, abbreviations, exact measurements, table etiquette, tray serving, table linen, dish washing, fireless cooker.

Sewing: Matching goods, crocheting, dyeing, knitting, knot tying, lace making, sewing on buttons, trimming, taking measurements, removing stains, sponging and pressing, simple elements of millinery.

Household management: House planning, home furnishings, study of furniture, home conveniences, housekeeping rules, building fires, sweeping and dusting, household accounts, ventilation, care of garbage, home nursing, entertaining guests.

Household arts is rich with teaching materials. The State courses contain 337 topics. One-fourth of these are contained in the list of frequently mentioned topics above. Some of the most suggestive topics appearing less frequently are also given.

Courses of study contain the names of a very large number (407) of prepared foods and recipes for their preparation. Many sewing articles (60) are also mentioned.

A valuable part of a household-arts course is a list of the equipment for cooking and sewing needed to carry out its provisions intelligently. It is advisable to make this list suggestive only, as allowance should be made for local adaptation.

MANUAL ARTS.

This subject, which in the survey includes industrial arts for lower grades and manual training for upper grades, holds a very unimportant position in State courses in the amount of space (Table 10) and of program time (Table 6) allotted to it.

Courses of study are greatly lacking in aims for industrial arts. Those mentioned for manual training overemphasize skill and excellency in workmanship, at the expense of ability to do things in line with construction and repair work on the farm.

The aims appearing most frequently may be summarized as follows:

Train hands for efficiency and skill in workmanship.
Impart valuable and useful information.
Vitalize and enrich other subjects.
Prepare for life through life's activities.
Secure the economic and social values of this subject.
Cause children to appreciate good workmanship.
Dignify all useful labor.

* Topics marked with a star (*) pertain to home making.

The industrial and seat-work outlines are, in some courses, independent of and irrelated to the regular work of children in other subjects. This has doubtless been a contributing factor to much valueless seat work in one-teacher schools.

TOPICS IN ELEMENTARY SCHOOL MANUAL ARTS.

Arranged in Order of Their Frequency of Appearance in 29 State Courses of Study.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

*Wood and bench work.	Measurements, measuring.	Drawing.
Construction work.	Illustrating stories.	Use of tools.
Paper cutting and folding.		

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Building activities.	Orderly sequence of work.	*Cardboard construction.
Representative construction.	Industrial problems.	Animal and people drawings.
Designing.	*Basketry.	Correlated subjects.
Accuracy.	Repairing.	*Reed and raffia work.
*Weaving.	Models, modeling.	*Clay modeling.
Handwork.	Sharpening tools.	Decorative construction.
Fruit, vegetable drawing.	Form, proportion.	Nailing.
Neatness, cleanliness.	Study of tools.	
Caring for tools.	Sketching, freehand.	
	Seasonal projects.	

The following suggestive topics appear in fewer than 40 per cent of the courses:

Braiding, knotting, mending harness, assembling and fitting, filling and gluing, sandpapering, sawing, waxing, lettering, scale drawing, working drawing, painting, blue prints, staining, *bookbinding, *cement, *leather work, *joining, *whittling, and knife work.

One-half of the topics are concerned with making things. Those having to do with industrial arts are found chiefly in lower grades, while manual training topics are found in upper grades.

The names of 302 different articles to make are given in manual arts courses. Articles mentioned most frequently may be made chiefly from cardboard and construction paper in lower grades and from lumber in upper grades. The utilitarian purpose is more prominent in upper grades than in lower grades.

A suggestive list of tools and materials needed to make the things mentioned in the outlines is considered a useful part of the course of study.

DRAWING.

The value of drawing has been increased through emphasis upon design or orderly arrangement. This subject has a contribution to make to school activities that is very worth while. Courses of study would have children study drawing to train them in expression, in

* Topics marked with a star (*) are offered in 156 city systems. Study made by Park and Barlau and reported in Bu. of Educ. Bul., No. 32, 1916.

observation, and in appreciation of the beautiful, as is made evident by the following summary of most frequently mentioned aims:

Ability to appreciate the beautiful.
Develop the powers of close observation.
Ability to express the beautiful intelligently.
Ability in freehand drawing.
Train senses, mind, and hand to work together.
Cultivate taste for the beautiful in design and in the industrial world.
Enrich other school subjects.
Know and enjoy good pictures.

A great variety of topics are given. It is difficult to classify them. About one-third refer to things to be drawn. Several industrial arts topics are prominent. To avoid extensive repetition, it is advisable to select a few leading topics, differing in kind, for the basis of each year's work.

TOPICS IN ELEMENTARY SCHOOL DRAWING.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

Designs, designing.	Object drawing.	Decorative drawing.
Illustrative drawing.	Mass, grouping.	Leaves, leaf drawing.
Fruits, nuts.	Landscapes.	Tree studies, forests.
Color studies.	Flowers, buds.	Animal drawings.

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

Vegetables.	Birds, butterflies.	Calendars.
Perspective drawing.	Stems, twigs.	Color schemes.
Tone relations, shading.	Geometric shapes, forms.	Painting lessons.
Construction drawing.	Christmas drawings.	Lines, rulings.
Borders.	Paper cutting and folding.	

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Seasonal topics.	Freehand drawing.	Easter drawings.
Grass, grass blades.	Color combinations.	Using materials, tools.
Toys, playthings.	Correlated subjects.	Proportions.
Lettering.	Models, modeling.	Action drawing.
Nature drawings.	Washington's Birthday.	May baskets.
Books, boxes.	Pose drawing.	Outline drawing.
Booklet covers.	Thanksgiving Day.	Drawing-display.
Blackboard drawings.	Halloween drawings.	
Houses, buildings.	Seeds, seed pods.	
Mountings, mounting drawings.	Mats, rugs.	
	Correlated geography.	

The following suggestive topics appear in fewer than 40 per cent of the courses:

Basketry, clay modeling, brush drawing, caste or sculpture work, color harmony, color designing, matching colors, tints and shades, molding and shaping, master pieces in art, drawing to scale, spacing, printing, silhouette work, sketching, valentines, stenciling, still life, weaving, working drawings.

It is desirable for a course in drawing to include a suggestive list of standard materials and equipment needed to carry out its provisions.

MUSIC.

In every schoolroom on every day a school is in session there should be some music. A morning song has much to do in creating a good spirit for both work and play. The importance of music is not measured by the length of its outlines (Table 12).

In one-teacher schools it is generally better to have but one class for whatever instruction is offered in music.

The dominant aim is to cultivate a love for music, while securing an understanding needed to appreciate it. Practice gives prominence to the following aims for teaching music:

Enjoy singing—a pleasing diversion and relaxation.
Cultivate an appreciation for good music.
Develop a pleasing, musical, expressive voice.
Develop the power of reading simple music at sight.
Develop the power to observe.
Develop a good school and community spirit.
Develop the rhythmic instinct and musical sense.

Music, like drawing, is a curriculum of activities. It consists (1) of the singing of childhood and community songs and (2) of training children to read music. It is not generally advisable for the latter to be undertaken by teachers who have not the necessary preparation. Outlines for two or three groups of children in one-teacher schools are needed only for those schools where children are taught to read music.

Thirty-five of the 56 topics in the survey list have to do with learning to read music. The relatively shorter outlines and fewer topics for upper grades indicate that State courses would have this ability acquired by the end of the fifth year.

TOPICS IN ELEMENTARY SCHOOL MUSIC.

Arranged in Order of Their Frequency of Appearance in 35 State Courses of Study.

APPEARING IN 80 PER CENT OR MORE OF THE COURSES.

*Singing rote songs.	*Notes, tone pictures.	*Staff lessons.
*Phrasing, phrase singing.	*Syllable (reading) names.	*Two-part exercises.
*Musical terms, characters.	*Key signatures.	

APPEARING IN 60 TO 80 PER CENT OF THE COURSES.

*Measures.	*Scale names (figures).	*Tone quality (pleasing).
*Time, time problems.	*Keeping time.	*Clef signature.
*Correct rhythm, accent.	Melodies, singing of.	*Rests.
Ear training.	Voice training.	*Intervals, skips.
*Sight reading.	*Pitch of notes.	

* Topics marked with a star (*) have to do with learning to read music.

APPEARING IN 40 TO 60 PER CENT OF THE COURSES.

Individual singing.
*Chromatic scale.
*Sharps and flats.
Rounds.
Memorizing songs.
Correct position, posture.
Dictation exercises.
*Scale work, scale songs.
Blackboard lessons.
Folk songs and dances.
*Pitch names (letters).
Patriotic songs.
Rhythmic exercises.
*Neutral syllable singing.
Singing for pupils.
*Major scale.
Written musical exercises.
*Tone relations.
*Scale ladder, circle of keys.
*Tone drills.
*Three-part exercises.
Familiar songs.
Imitation in singing.
*Minor scales.
*Bars for staff.
Expression.
Breathing exercises.
Rote songs at first.
Imitating sounds in nature.
*Tie, slur.
*Lines, spaces.
*National songs and hymns.
Choruses, group singing.
Community singing.

A suggestive list of familiar songs, songs for children, and community songs are made a part of several courses of study. These songs should be selected with care, and so far as possible made available to the schools. A large number of the songs recommended are not found in some of the popular community and school song books.

RECOMMENDATIONS.

The following principles of guidance for the improvement of industry and art courses for rural schools are suggested:

(*a*) Outlines in agriculture provided for grades five to eight. Distribution of the work in such a way as to make possible alternation or rotation of grade outlines.

(*b*) Household arts and manual arts correlated with agriculture for the upper grades.

(*c*) Industrial arts correlated with nature study in the four lower grades.

(*d*) General outlines in drawing and music provided with adequate differentiation of work to mark stages of progress.

(*e*) The amount of time and attention given industrial subjects increased.

(*f*) Live, motivated aims for each subject supplied and set out from the main body of the outline as important considerations.

(*g*) The work of industrial subjects organized about projects and problems.

(*h*) The work made to center around home industries and farm problems vital to the life of the representative regions of the State.

(*i*) The use of school agricultural surveys encouraged, emphasizing the utilization of data collected.

(*j*) The most useful tools, equipment, and bulletins necessary for the teaching of industrial arts listed with the outlines in the course of study.

(*k*) The use of standard community songs encouraged.

*Topics marked with a star (*) have to do with learning to read music.

Chapter XI.

BOOKS AND REFERENCE MATERIALS.

Survey reports show that in many schools the textbooks in use are the real courses of study. Young and inexperienced teachers often follow the textbooks rather than the course of study. Progress would be most rapid, in all probability, if more textbooks were made in harmony with course-of-study provisions, and if more than one text were provided, as in the case of primary readers.

State courses contain the titles of many books (4,172) and bulletins. The very abundance of books and materials makes the question of wise selection problematic. It reflects the present tendency of directing teachers away from the exclusive use of textbooks to the intelligent use of many good library and reference books.

Seventy per cent of the 3,188 library books mentioned are given in connection with reading and language (1,178), history (959), and geography (380). In these subjects in particular, children need an extensive and varied reading experience.

Relatively few library books are mentioned in all but the four subjects just named. One book in four mentioned in courses of study is a textbook. The need for adequate selection of textbooks in these subjects is, therefore, especially great. There are needed spellers with most carefully selected vocabularies; handwriting books that guide both teacher and children; rural arithmetics; books with many good games fully explained; books in agriculture, household arts, and manual arts, with many suggested problems and selected projects adapted to local conditions; industrial drawing books; and community song books.

For library books, in addition to the four subjects containing a high percentage of recommendations, there are needed civics readers, health readers, books containing valuable lessons in home making and character building, nature readers, farm-life books and agricultural readers, and industrial readers.

Titles of a large number (1,753) of shorter selections appeared in reading and language outlines. These are for more intensive study in regular class work. A large number are poems. Some of the poems are suggested for memorization in connection with language.

The titles of many library books appear in both city and rural courses of study. In checking the list of titles compiled from State courses (not included in this publication) with the lists of titles contained in city courses,[1] it was found that city courses assign about one-half (54 per cent) of the same books to a grade higher than is assigned by rural courses. Assignments in rural courses often provide readings too difficult for many rural children.

A school library can scarcely be considered complete without several of the best professional books for teachers, as suggested by 549 titles appearing in the courses of study.

Nor would a school library be complete without a large dictionary, a work of reference consisting of relatively few volumes, with easy and interesting reading material for children, and several of the best school magazines.

The problems of making an adequate number of the best books available to the schools and of securing constant and intelligent use of them should be given larger attention in courses of study.

TABLE 24.—*Number of books and reading materials whose titles appear in 44 State courses of study.*

Subjects.	Texts.	Library books.	Total.
Reading	305	1,178	1,483
Language	84	(1)	84
Spelling	35	2	37
Handwriting	7	11	18
Arithmetic	102	6	108
History	88	959	1,047
Civics	53	7	60
Manners and morals	11	22	33
Geography	41	380	421
Hygiene	73	29	102
Physical education	.....	51	51
Nature study	32	152	184
Agriculture	47	114	161
Household arts	25	85	110
Manual arts	30	71	101
Drawing	15	25	40
Music	36	96	132
Total	984	3,188	4,172
Teachers	.....	.....	549
Reading selections	.....	1,753	1,753

[1] In reading and language, 1,178 books.

RECOMMENDATIONS.

The following principles of guidance for improving courses of study with regard to books and reference materials are suggested:

(*a*) Those textbooks selected that most nearly meet the conditions of a modern standard course of study.

[1] Bobbitt, Boyce, and Perkins, "Literature in the Elementary Curriculum." Fifty city courses. Elementary Sch. Jour., vol. 13, pp. 158–166. (Dec., 1913.)

Munson and Hoskinson, "Library and Supplementary Reading Books Recommended for use in Elementary Schools." Thirty-six city courses and 14 State courses. Sixteenth Yearbook of the National Society for the Study of Education, Part I, pp. 33–59.

(*b*) Those supplementary textbooks and library books in various grades and subjects selected that give teachers largest assistance in carrying out the provisions of the course of study.

(*c*) Constant reference made to books selected at suitable points in the outlines.

(*d*) Specific and definite directions given for the intelligent use of textbooks and library.

(*e*) Books and materials assigned which are on a level with the experience and attainments of children in various grades and classes.

(*f*) Consciousness of the importance of making many books, bulletins, and magazines available to children and on making constant and intelligent use of all available material.

(*g*) Selection of a minimal number of the shorter reading selections for careful study by all children. Selection of the finest literary gems and poems that may be recommended for memorization.

(*h*) Selection of those professional books that are most helpful to the average teacher using them.

(*i*) Consciousness of the importance of giving children a wide reading experience, particularly in subjects that have large content value.

REFERENCE LIST.

Andreas, J. Mace. Health education in rural schools. Boston, Houghton Mifflin Co., 1919. 321 p.
Chapter 6 describes a plan for the course of study in hygiene.

—— The teaching of hygiene in the grades. Boston, Houghton Mifflin Co., 1918. 176 p.
An excellent treatment on methods of teaching.

Ashbaugh, E. J. Handwriting of Iowa school children. Iowa City, Iowa., 1916. 24 p. (University of Iowa. Extension Bulletin no. 15.)

Bailey, L. H. The nature study idea. New York, The Macmillan Co., 1909. 246 p.

Barnes, Walter. English in the country schools. Chicago, Row, Peterson Co., 1913. 286 p.
Contains many suggestions on the teaching of reading, language, and spelling in rural schools.

Betts, George E. Classroom method and management. Indianapolis, Bobbs-Merrill Co., 1917. 386 p.
This book contains excellent chapters on aims, methods, and selection of teaching materials. The following chapters are important:
Chapter 7, Subject matter of education, p. 79–100.
Chapter 8, The organization of subject matter, p. 100–113.
Chapters 10 to 20, on the school subjects reading, spelling, language, arithmetic, geography, history, civics, physiology and hygiene, penmanship, agriculture, and home economics.

—— Social principles of education. New York, Charles Scribner's Sons, 1912. 318 p.
Chapter 9 deals with the curriculum.

—— *and* Hall, Otis S. Better rural schools. Indianapolis, Bobbs-Merill Co., 1914. 512 p.
The curriculum of the rural school, part 11. The book also contains a good chapter on correlation, p. 77–93.

Bobbitt, Franklin. The curriculum. Boston, Houghton Mifflin Co., 1918. 295 p.
A most scientific treatment of what to teach. The social point of view.

—— "Reading materials in the elementary schools of Indianapolis." *In* Elementary School Journal, 13: 665–688, 741–761, May, June, 1919.

—— What the schools teach and might teach. New York, Russell Sage Foundation. 1915. 108 p.
One of the sections of the report of the Educational survey of Cleveland, Ohio.

—— Boyce, A. C., *and* Perkins, M. L. "Literature in the elementary curriculum." *In* Elementary School Journal, 13: 158–166, Dec., 1913.
Graded list of books appearing in city and state courses.

Boy Scouts of America. Seventh annual report. 144 p.
The Scout oath, p. 9–10.

California. State Board of Education. Suggestions for the teaching of good manners in the elementary schools. 1916. 39 p. (Bulletin no. 18.)

—— —— The teaching of music in the rural elementary schools. 4 p. (Bulletin no. 15.)

Charters, W. W. Teaching common branches. Boston, Houghton Mifflin Co., 1913. 355 p.
This book contains a chapter on 14 of the common-school subjects. The only subjects in this survey not treated in the book are household arts, manual arts, and manners and morals.

Coffman, L. D. "The war and the curriculum." *In* Educational Administration and Supervision, 4: 10–23, Jan., 1918.
An excellent article on curriculum changes incident to the war.

Cubberley, Elwood P. Public education in the United States. Boston, Houghton Mifflin Co., 1919. 517 p.
A study of the more important present-day problems in public education in the United States in the light of their historic past.
Chapter 10, The reorganization of elementary education, p. 285–322.

—— Rural life and education. Boston, Houghton Mifflin Co., 1914. 367 p.
Chapter 9, The teaching equipment, p. 206–226.
Chapter 11, A new curriculum, p. 256–283.

Curtis, Henry S. The reorganized school playground. Washington, Gov't Printing Office, 1913. 28 p. (U. S. Bureau of Education. Bulletin no. 40.)

Delaware Public School Commission. Public education in Delaware. Report. New York, General Education Board. 1919. 202 p.
Chapter 5, The present school system; chapter 6, The teachers; chapter 7, The schools and their work.

Dewey, Evelyn. New schools for old. New York, E. P. Dutton Co., 1919. 337 p.
Two chapters are especially worthy of mention:
Chapter 10, Agriculture and the curriculum, p. 252-293.
Chapter 11, Place of reading and writing in the curriculum, p. 293-322.

Engleman, J. O. Moral education in school and home. New York, Benj. H. Sanborn Co., 1918. 314 p.

Farnum, R. B. Present status of drawing and art in elementary and secondary schools of the United States. Washington, Gov't Printing Office, 1914. 375 p. (U. S. Bureau of Education. Bulletin no. 13.)
Aims and scope in art teaching, p. 25-35.

Foght, H. W. The American rural school. New York, Macmillan Co., 1910. 361 p.
A suggestive earlier treatise on problems pertaining to rural education.

——— The rural teacher and his work. New York, Macmillan Co., 1917. 359 p.
Part 3, The teacher as maker of the revitalized course of study, p. 225-345.
An excellent discussion of the curriculum for rural schools, with emphasis on the new subjects, including manual arts and home economics.

Hart, Joseph K. Educational resources of village and rural communities. New York, Macmillan Co., 1913. 279 p.
Chapter 15, Community life as the curriculum of the school, p. 213-244.

Hill, Mabel. The teaching of civics. Boston, Houghton Mifflin Co., 1914. 145 p.
An excellent treatise on the best methods of teaching civics. A number of the topics in the survey list are treated separately.

Holden, P. H. The rotation plan. Chicago, International Harvester Co., 1919. 21 p.
A bulletin on what the rotation plan for the teaching of agriculture is and what it does.

Illinois Teachers' Association. Illinois school survey. 1917. 377 p.
Survey of the rural schools, p. 276-377

——— Second report of the Committee on Elimination of Subject Matter. 1916. 152 p.

Jessup, W. A. "Economy of time in arithmetic." *In* Elementary School Teacher, 14: 461-576, June, 1914.

Judd, C. H. Introduction to the scientific study of education. Boston, Ginn & Co., 1918. 333 p.
Chapters 8, 9, 11, and 14 contain valuable suggestions regarding the curriculum.

Kendall, C. N., *and* Stryker, Florence E. History in the elementary school. Boston, Houghton Mifflin Co., 1918. 134 p.
An excellent treatment on methods of teaching history.

——— *and* Mirick, Geo. A. How to teach the fundamental subjects. Boston, Houghton Mifflin Co., 1915. 329 p.
Chapters on English, mathematics, geography, history, civics, and hygiene.

——— How to teach the special subjects. Boston, Houghton Mifflin Co., 1918. 305 p.
Chapters on music, physical education, drawing, nature study, and agriculture.

Lathrop, Edith A. "Status of standardization of the rural schools of the United States." *In* University of Virginia. Record Extension Series. Vol. 5, no. 2, p. 16-23, Nov., 1919.

Leiper, M. A. Teaching language through agriculture and domestic science. Washington, Gov't Printing Office, 1912. 30 p. (U. S. Bureau of Education. Bulletin no. 18.)

Lyford, Carrie A. Three short courses in home making. Washington, Gov't Printing Office, 1917. 104 p. (U. S. Bureau of Education. Bulletin no. 23.)

McFee, Inez N. The teacher, the school and the community. Cincinnati, American Book Company, 1918. 256 p.
Contains suggestions on the teaching of reading, language, arithmetic, history, geography, hygiene, nature study, agriculture, and home science.

McMurry, Charles. Teaching by projects. New York, Macmillan Co. 1920. 257 p.

——— "Principles for making and judging a curriculum in geography." *In* Teachers College Record, 16: p. 317-320, Sept., 1915.
The Montana rural and city courses in geography are based on McMurry's principles.

——— "Uniform curriculum and examinations." *In* Journal of Proceedings and Addresses, National Education Association, July, 1913, p. 131-159.

Maryland Educational Survey Commission. Public education in Maryland. 1916. 230 p.
Chapter 6, The teachers; chapter 8, Instruction.

Minnesota Educational Association. Elimination in elementary course of study. 1914. 15 p.

Monroe, W. S. Second and third annual reports of the Bureau of Educational Measurements and Standards, Vol. 3, no. 7, 80 p. Bureau of Educational Measurements and Standards. Kansas State Normal School, Emporia. 1917.
Considers reading, spelling, handwriting, and arithmetic.

National Institute for Moral Instruction, Washington, D. C. Children's code of morals for elementary schools. 4 p.

National Society for the Study of Education. Minimal essentials in elementary school subjects. Year-Books.

Reports on concrete effort to determine relative values in all elementary school subjects.

—— First report. 152 p. Fourteenth Year-Book, part 1, 1915.

Reports on reading, handwriting, spelling, composition and grammar, arithmetic, geography, history and literature.

—— Second report. 192 p. Sixteenth Year-Book, part 1, 1917.

Reports on reading, handwriting, spelling, language, arithmetic, history, and physical education.

—— Third report. 134 p. Seventeenth Year-Book, part 1, 1918.

Reports on arithmetic, geography, reading, composition, civics, and history.

—— Fourth report. 123 p. Eighteenth Year-Book, part II, 1919.

Reports on principles of method in teaching reading, spelling, arithmetic, and writing as derived from scientific investigations. Drawing and music are also considered.

—— The measurement of educational products. 194 p. Seventeenth Year-Book, part II, 1918.

Nolan, A. W. The teaching of agriculture. Boston, Houghton Mifflin Co., 1918. 277 p.

Contains an outline course of nature study and agriculture for the grades.

Ohio State School Survey Commission Report. 1914. 308 p.

Chapter 7, Classroom instruction. 106–156 p.

Park, J. C., *and* Barlan, C. L. Some facts concerning manual arts and home making subjects in 156 cities. Washington, Gov't Printing Office, 1916. 28 p. (U. S. Bureau of Education. Bulletin no. 32.)

Quick, Herbert. The brown mouse. Indianapolis, Bobs-Merrill Co., 1915. 310 p.

Rapeer, L. W., *and others*. Teaching elementary school subjects. New York, Charles Scribners Sons, 1917. 569 p.

This book contains chapters on each of the 17 school subjects included in this survey.

Rowell, P. C. "The status of science teaching in the elementary schools of the United States." *In* Elementary School Teacher, 13: 387–404.

Saint Louis, Mo. Department of Instruction. Moral education in the elementary schools. 1918. 20 p.

Contains an excellent article on the teaching of morals through all school activities.

Sears, J. B. Classroom organization and control. Boston, Houghton Mifflin Co., 1918. 295 p.

Part 2, The machinery and the process, p. 109–227. Excellent chapters on the school curriculum and the daily program.

Tidyman, W. F. The teaching of spelling. Yonkers-on-Hudson, N. Y., World Book Co., 1919. 178 p.

One of the best recent summaries of scientific investigations of spelling, and their interpretation for methods and materials.

Trafton, G. H. The teaching of science in the elementary schools. Boston, Houghton Mifflin Co., 1918, 288 p.

Part 1, chapter 2, gives aims in teaching science, and chapter 3 a discusion of the materials and their correlation.

United States. Department of Agriculture. Correlating agriculture with the public-school subjects of the Northern States. 42 p. Correlating agriculture with the public-school subjects of the Southern States. 41 p. Washington, Gov't Printing Office, 1915. (Bulletin, nos. 281 and 132, 1915.)

United States. Department of the Interior. Bureau of Education. A survey of the educational institutions of the State of Washington. Washington, Gov't Printing Office, 1916. 211 p. (Bulletin no. 26, 1916.)

Section 2, General review of the public-school system, p. 125–165.

—— —— —— An educational study of Alabama. Washington, Gov't Printing Office, 1919. (Bulletin no. 41, 1919.)

—— —— —— An educational survey of a suburban and rural county. Washington, Gov't Printing Office, 1913. 64 p. (Bulletin no. 32.)

Chapter 2, Educational conditions, p 3–51.

—— —— —— Educational conditions in Arizona. Report of a survey. Washington, Gov't Printing Office, 1917. (Bulletin no. 44, 1917.)

Chapter 2 contains a survey of rural schools.

—— —— —— Educational conditions in Arizona. Report of a survey. Washington, Gov't Printing Office, 1917. (Bulletin no. 44.)

Chapter 2 contains a survey of rural schools.

—— —— —— Educational survey of Wyoming. Washington, Gov't Printing Office, 1916. 120 p. (Bulletin no. 29, 1916.)

Chapter 2, Education in the United States, p. 27–65.

—— —— —— Report of an inquiry into the administration and support of the Colorado school system. Washington, Gov't Printing Office, 1917. 93 p. (Bulletin no. 5, 1917.)

Chapter 5, The administration of school instruction, p. 47–92.

United States. Department of the Interior. Bureau of Education. The educational system of South Dakota. Washington, Gov't Printing Office, 1918. 304 p. (Bulletin no. 31, 1918.)

Chapter 12, Course of study for rural schools, p. 79–80; chapter 14, Instruction and supervision in rural schools, p. 112–135.

——— ——— ——— The rural teacher of Nebraska. Washington, Gov't Printing Office, 1919. 67 p. (Bulletin no. 20, 1919.)

Chapter 3, Education, p. 30–38.

Virginia Educational Commission. Public-schools survey and report. 1919. 400 p.

Wilson, H. B., *and* Wilson, G. M. Motivation of school work. Boston, Houghton Mifflin Co., 1916. 256 p.

Excellent chapters on the motivation of reading, language, history, geography, and arithmetic.

Wooster, T. J. Teaching in rural schools. Boston, Houghton Mifflin Co., 1917. 315 p.

Section II deals with the teaching of elementary school subjects. All of the school subjects usually taught in rural schools are reviewed in detail as to methods and materials.

Yocum, A. D. "The determination of the course of study." *In* Journal of Proceedings and Addresses, National Education Association, 1914, p. 223–235.

INDEX.